

FIG. 1

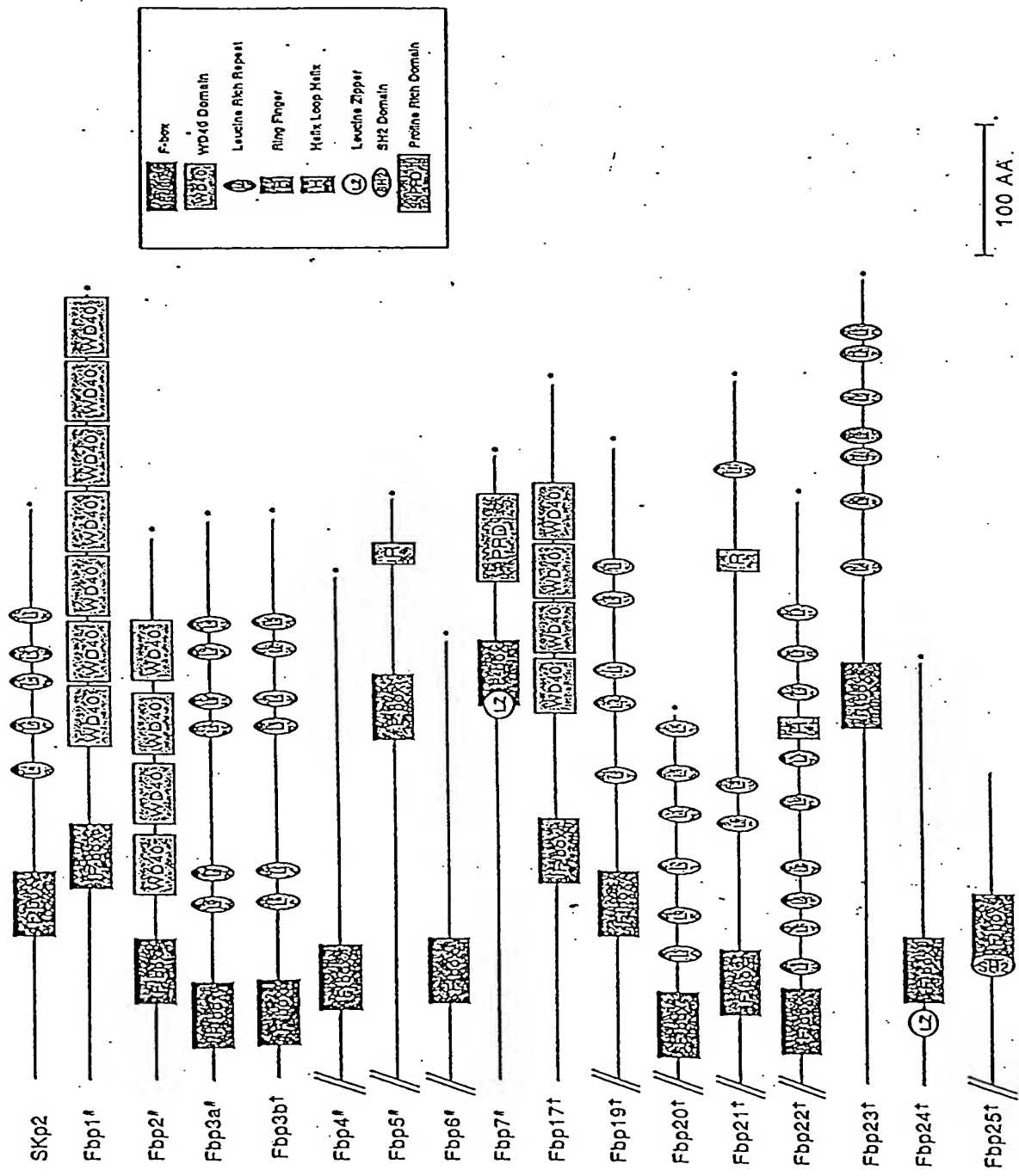


FIG. 2

10 20 30 40 50 60
MDPAEAVLQEKALKFMNSSEREDCNNGEPPrKIIPEKNSLRQTYNSCARLCLNQETVCLA
70 80 90 100 110 120
STAMKTENCVAKTKLANGTSSMIVPKQRKLSASYEKEKELCVKYFEQWSESDQVEFVEHL
130 140 150 160 170 180
ISQMCHYQHGHSYLYKPMQLQDFITALPARGLDHIAENILSYLDAKSLCAAELVCKEWY
190 200 210 220 230 240
RVTSDGMLWKKLIERMVVRTDSLWRGLAERRGWGQYLFKNKPPDGNAPPNSFYRALYPKII
250 260 270 280 290 300
QDIETIESNWRCGRHSLQRIHCRSETSKGVYCLQYDDQKIVSGLRDNTIKIWDKNTLECK
310 320 330 340 350 360
RILTGHTGSVLCLQYDERVIITGSSDSTVRVWDVNTGEMLNLIHHCEAVLHLRFNNGMM
370 380 390 400 410 420
VTC SKDRSIAVWDMASPTDITLRRVLVGHRAAVNVVDFDDKYIVSASGDRTIKVWNTSTC
430 440 450 460 470 480
EFVRTLNHGKRGIAQLQYRDLVVSGSSDNTIRLWDIECGACLRVLEGHEELVRCIRFDN
490 500 510 520 530 540
KRIVSGAYDGKIKVWDLVAALDPAPAGTLCRLTLVEHSGRVFRLQFDEFQIVSSSHDDT
550 560
ILIWDFLNDPAAQAEPPrSPSRITYTISR

FIG. 3A

10 20 30 40 50 60 70 80 90
TGGCTTGGCTGGCGCTGGCACCAAGGGGCGGCGGCGGAGAGCGGACCCAGTGGCCTCGGCGATTATGGACCCGCGGAGCGCGTGGCTGC

100 110 120 130 140 150 160 170 180
AAGAGAAGGCACTCAAGTTTATGAATTCTCAGAGAGAGAAGACTGTAATAATGGCGAACCCCTAGGAAGATAATACCAGAGAAGAATCACT

190 200 210 220 230 240 250 260 270 280
TAGACAGACATACAACAGCTGTGCCAGACTCTGCTTAAACCAAGAAACAGTATGTTTACGAAGCACTGCTATGAAGACTGAGAATTGTGTGGCC

290 300 310 320 330 340 350 360 370
AAAACAAACTTGCCAAATGGCACTTCCAGTATGATTTGTGCCAAGCAACGGAACCTCTCAGCAAGCTATGAAAAGGAAAAGGAACCTGTGTGTCA

380 390 400 410 420 430 440 450 460 470
AATACTTTGAGCAGTGGTCAAGTCAAGTGAATTTGTGGAACATCTTATATCCCAAATGTGTCTATTACCAACATGGGCACATAAACTC

480 490 500 510 520 530 540 550 560
GTATCTTAAACCTATGTTGCAGAGAGATTTCATAACTGCTCTGCCAGCTCGGGGATTGGATCATATCGCTGAGAACATTCTGTACATACCTGGAT

570 580 590 600 610 620 630 640 650
GCCAAATCACTATGTGCTGCTCAACTTGTGTGCAAGGAATGGTACCGAGTGAACCTCTGATGGCATGCTGTGGAAGAAGCTTATCGAGAGAATGG

660 670 680 690 700 710 720 730 740 750
TCAGGACAGATTCTCTGTGGAGAGGCGCTGGCAGAACGAGAGGATGGGGACAGTATTTATTCAAAAACAAACCTCCTGACGGGAATGCTCTCTC

760 770 780 790 800 810 820 830 840
CAACTCTTTTATAGAGCACTTTATCCTAAAATTATACAAGACATTGAGACAATAGAATCTAATTGGAGATGTGGAAGACATAGTTTACAGAGA

850 860 870 880 890 900 910 920 930 940
ATTCACTGCCGAAGTGAACAAGCAAGGAGTTTACTGTTTACAGTATGATGATCAGAAAATAGTAAGCGGCGCTTCGAGACAACACAATCAAGA

950 960 970 980 990 1000 1010 1020 1030
TCTGGGATAAAAACACATTGGAATGCAAGCGAATTCACAGGCCATACAGGTTTCACTCTCTGTCTCCAGTATGATGAGAGAGTGTATCATAAC

1040 1050 1060 1070 1080 1090 1100 1110 1120
AGGATCATCGGATTCCACGGTCAGAGTGTGGATGTAATAACAGGTGAAATGCTAAACACGTTGATTACCATTTGTGAAGCAGTTCTGCACTTG

1130 1140 1150 1160 1170 1180 1190 1200 1210 1220
CGTTTCAATAATGGCATGATGGTCACTCTCCAAAGATGTTCCATTGCTGTATGGGATATGGCCTCCCAACTGACATTACCTCCGGAGGG

1230 1240 1250 1260 1270 1280 1290 1300 1310
TGCTGGTCCGACACCGAGCTGCTGTCAATGTTGTAGACTTTGATGACAAGTACATTGTTTCTGCATCTGGGGATAGAATATAAAGGTATGGAA

1320 1330 1340 1350 1360 1370 1380 1390 1400 1410
CACAAGTACTTGTGAATTTGTAAGGACCTTAAATGGACACAAACGAGGCATTCCTGTTTGCAGTACAGGGACAGGCTGGTAGTGAGTGGCTCA

1420 1430 1440 1450 1460 1470 1480 1490 1500
TCTGACAACACTATCAGATTATGGGACATAGAATGTTGTCATGTTTACGAGTGTAGAAAGGCCATGAGGAATTTGGTGCCTTGTATTTCGATTTC

1510 1520 1530 1540 1550 1560 1570 1580 1590
ATAACAAGAGGATAGTCACTGGGCGCTATGATGGAAAAATTAAAGTGTGGGATCTTGTGGCTGCTTTGGACCCCGTGCTCTGCAGGGGACACT

1600 1610 1620 1630 1640 1650 1660 1670 1680 1690
CTGCTACGGACCCCTTGTGGAGCATTCGGGAAGAGTTTTCGACTACAGTTTGATGAATTCCAGATTGTCACTAGTTTACATGATGACACAATC

1700 1710 1720 1730 1740 1750 1760 1770 1780
CTCATCTGGGACTTCTCTAAATGATCCAGCTGCCCAAGCTGAACCCCCCGTTCCCTTCTCGAACATACACCTACATCTCCAGATAAAATAACCA

1790 1800 1810 1820 1830 1840 1850 1860 1870 1880
TACACTGACCTCACTATTGCCAGGACCCATTAAAGTTGGGCTATTTAACGTATCTGCCAATACCAGGATGAGCAACAACAGTAACAATCAAAC

1890 1900 1910 1920 1930 1940 1950 1960 1970
TACTGCCCAAGTTTCCCTGGACTAGCCGAGGAGCAGGGCTTTGAGACTCCTGTTGGGACACAGTTGGTCTGCAGTCCGCCCCAGGACGGTCTACTC

1980 1990 2000 2010 2020 2030 2040 2050 2060
AGCACAACCTGACTGCTTCAGTCTGCTATCAGAAGATGCTCTCTATCAATTTGTGAATGATTGGAACCTTTTAAACCTCCCTCTCTCTCTCTT

2070 2080 2090 2100 2110 2120 2130 2140 2150
CACCTCTGCACCTAGTTTTCCTCCATTTGGTTCCAGACAAAGGTGACTTATAAATATATTTAGTGTTTTGCCAGAAAAA

FIG. 3B

10 20 30 40 50 60
MERKDFETWLDNISVTFLSLTDLQKNETLDHLISLSGAVQLRHLSNNLETLLKRDFLKL
70 80 90 100 110 120
PLELSFYLLKWLDPQTLLTCCLVSKQWNKVISACTEVWQTACKNLGWQIDDSVQDALHWK
130 140 150 160 170 180
KVYLKAILRMKQLEDHEAFETSSSLIGH SARVYALYYKDGLLCTGSDDL SAKLWDVSTGQC
190 200 210 220 230 240
VYGIQTHTCAAVKFDEQKLV TGSFDNTVACWEWSSGARTQHFRGHTGAVFSVDYNDELDI
250 260 270 280 290 300
LVSGSADFTVKVWALSAGTCLNTLTGHTEWVTKVVLQKCKVKSL LHSPGDYILLSADKYE
310 320 330 340 350 360
IKIWPIGREINCKCLKTSLVSEDRSICLQPRLHFDGKYIVCSSALGLYQWDFASYDILRV
370 380 390 400 410 420
IKTPEIANLALLGFGDIFALLFDNRYLYIMDLRTE SLISRWPLPEYRESKRGSSFLAGEH
PG

FIG. 4A

10 20 30 40 50 60 70 80 90
ATGGAGAGAAAAGGACTTTGAGACATGGCTTGATAACATTCTGTACATTCTTCTCTGACGGACTTGCAGAAAAATGAAACTCTGGATCACC
100 110 120 130 140 150 160 170 180
TGATTAGTCTGAGTGGGGCAGTCCAGCTCAGGCATCTCTCCAAATAACCTAGAGACTCTCTCAAGCGGGACTTCCTCAAACCTCCTTCCCTTGG
190 200 210 220 230 240 250 260 270 280
GCTCAGTTTTTATTGTTAAAAATGGCTCGATCCTCAGACTTTACTCACATGCTGCTCTCTAAACAGTGGAAATAAGTGATAAGTGCTGT
290 300 310 320 330 340 350 360 370
ACAGAGGTGTGGCAGACTGCATGTAAAAATTGGGCTGGCAGATAGATGATTCTGTTTCAGGACGCTTTCAGTGGGAAGGTTTATTGGAAGG
380 390 400 410 420 430 440 450 460 470
CTATTTTGAGAAATGAAGCAACTGGAGGACCATGAAGCCTTTGAACCTCGTCATTAATTGGACACAGTCCAGAGTGTATGCACCTTTACTACAA
480 490 500 510 520 530 540 550 560
AGATGGACTTCTCTGTACAGGGTCAGATGACTTGTCTGCAAGCTGTGGGATGTGAGCACAGGGCAGTGGTTTATGGCATCCAGACCCACACT
570 580 590 600 610 620 630 640 650
TGTGCAGCGGTGAAGTTTGATGAACAGAAGCTTGTGACAGGCTCCTTTGACAACACTGTGGCTTGTCTGGGAATGGAGTTCCGGAGCCAGGACCC
660 670 680 690 700 710 720 730 740 750
AGCACTTTCGGGGGCACACGGGGGGCGGTATTTAGCGTGGACTACAAATGATGAAGTGGATATCTTGGTGAGCGGCTCTGCAGACTTCACTGTGAA
760 770 780 790 800 810 820 830 840
AGTATGGGCTTTATCTGCTGGGACATGCCTGAACACACTCACCGGGCACAGGAATGGGTACCAAGGTAGTTTTCAGAAAGTCAAAAGTCAAG
850 860 870 880 890 900 910 920 930 940
TCTCTCTTGCACAGTCTCTGGAGACTACATCCTCTTAAGTGACAGACAAATATGAGATTAAGATTGGCCAAATGGGAGAGAAATCAACTGTAAGT
950 960 970 980 990 1000 1010 1020 1030
GCTTAAAGACATTGTCTGTCTCTGAGGATAGAAGTATCTGCCTGCAGCCAAGACTTCATTTTGATGGCAAATACATTGTCTGTAGTTCAGCACT
1040 1050 1060 1070 1080 1090 1100 1110 1120
TGGTCTCTACCACTGGGACTTTGCCAGTTATGATATTCTCAGGGTCATCAAGACTCTCTGAGATAGCAAATGGCCCTTCTGCTTGGAGAT
1130 1140 1150 1160 1170 1180 1190 1200 1210 1220
ATCTTTGGCCTCTGTGTTGACAACCGCTACCTGTACATCATGGACTTGGGACAGAGAGCCTGATTAGTCCCTGGCCTCTGCCAGAGTACAGGG
1230 1240 1250 1260 1270 1280 1290 1300 1310
AATCAAAAGAGAGGCTCAAGCTTCTTGGCAGGCGAACATCTCTGGCTGAATGGACTGGATGGGCACATGACACGGGCTTGGTCTTTGCCACCCAGC
1320 1330 1340 1350 1360 1370 1380 1390 1400 1410
ATGCCTGACCACAGTATTCACTGGTGTGTGGAAGGAGCAGGCTGACACCATGAGCCACCAACCGCTGACTGACTTTGGGTGCCGGGGCTGGG
1420 1430 1440 1450 1460 1470
GGTTTTGGGTGCACCTCTGCGGCACCGGACTGCATGAACCAAAGTCTCACCTAATGGTATCATCA

FIG. 4B

10	20	30	40	50	60
MKRGGGRDSDRNSSEEGTAEKSKKLRTTNEHSQTCDWGNLLQDIILQVFKYLPLLDRHAS					
70	80	90	100	110	120
QVCRNWNQVFHMPDLWRCFEFELNQPATSYLKATHPELIKQIIKRHSNHLQYVSFKVDSS					
130	140	150	160	170	180
KESAEAAACDILSQLVNCSLKTGLISTARPSFMDLPKSHFISALTVVFNSSKSLSSLKID					
190	200	210	220	230	240
DTPVDDPSLKVLVANNSDTLKKLMSSCPHVSPAGILCVADQCHGLRELALNYHLLSDEL					
250	260	270	280	290	300
LLALSSEKHVRLEHLRIDVVSSENPGQTHFHTIQKSSWDAFIRHSPKVNLMYFFLYEEEF					
310	320	330	340	350	360
DPFFRYEIPATHLYFGRSVSKDVLGRVGMTCPRLVELVVCANGLRPLDEELIRIAERCKN					
370	380	390	400	410	420
LSAIGLGECEVSCSAFVEFVKMCGGRLSQLSIMEEVLIPDQKYSLEQIHWEVSKHLGRVW					
FPDMMPTW					

FIG. 5A

10 20 30 40 50 60 70 80 90
CGGGGTGGTGTGTGGGGGAAGCCGCCCGGCAGCAGGATGAAACGAGGAGGAAGAGATAGTGACCGTAATTCATCAGAAGAAGGAACATGCAGA
100 110 120 130 140 150 160 170 180
GAAATCCAAGAACTGAGGACTACAAATGAGCATTCTCAGACTTGTGATTGGGGTAATCTCCTCAGGACATTATTCTCCAAGTATTTAAATAT
190 200 210 220 230 240 250 260 270 280
TTGCCTCTTCTTGACCGGCTCATGCTTCACAAAGTTTCCCGCAACTGGAACAGGTATTTACATGCCTGACTTGTGGAGATGTTTTGAATTTG
290 300 310 320 330 340 350 360 370
AACTGAATCAGCCAGTACATCTTATTTGAAAGCTACCCATCCAGAGCTGATCAAAAGACATTATTAAGACATTCAAACCATCTACAATATGT
380 390 400 410 420 430 440 450 460 470
CAGCTTCAAGGTGGACAGCAGCAAGGAATCAGCTGAAGCAGCTTGTGATATAGTATCGCAACTTGTGAATTGCTCTTTAAAAACACTTGGACTT
480 490 500 510 520 530 540 550 560
ATTTCAACTGCTCGACCAAGCTTTATGGATTTACCAAGTCTCACTTTATCTCTGCACTGACAGTTGTGTTGTTAACTCCAAATCCCTGTCTT
570 580 590 600 610 620 630 640 650
CGCTTAAGATAGATGATACTCCAGTAGATGATCCATCTCTCAAAGTACTAGTGGCCAAACAATAGTGATACACTCAAGCTGTTGAAAATGAGCAG
660 670 680 690 700 710 720 730 740 750
CTGTCTCATGTCTCTCCAGCAGGTATCCTTTGTGTGGCTGATCAGTGTACGGCTTAAGAGAACTAGCCCTGAATACCACTTATTGAGTGAT
760 770 780 790 800 810 820 830 840
GAGTTGTTACTTGCATTGTCTTCTGAAAAACATGTTTCGATTAGAACATTTCCGCATTGATGTAGTCAGTGAGAATCCTGGACAGACACACTTCC
850 860 870 880 890 900 910 920 930 940
ATACTATTCAAGAGTAGCTGGGATGCTTTTCATCAGACATTACCCAAAGTGAACCTTAGTGATGTATTTTTTTTATATGAAGAAGAAATTTGA
950 960 970 980 990 1000 1010 1020 1030
CCCCCTCTTTCCGTATGAAATACCTGCCACCCATCTGTACTTTGGGAGATCAGTAAGCAAAGATGTGCTTGGCCGTGCGGAATGACATGCCCT
1040 1050 1060 1070 1080 1090 1100 1110 1120
AGACTGGTTGAACTAGTAGTGTGTGCAAAATGGATTACGGCCACTTGATGAAGAGTTAATTCGCATTGCAGAACCTTGCAAAAATTTGTCAGCTA
1130 1140 1150 1160 1170 1180 1190 1200 1210 1220
TTGGACTAGGGGAATGTGAAGTCTCATGTAGTGCCTTTGTGAGTTTGTGAAGATGTGCGTGGCCGCTATCTCAATTATCCATTATGGAAGA
1230 1240 1250 1260 1270 1280 1290 1300 1310
AGTACTAATTCCTGACCAAAAGTATAGTTTGGAGCAGATTCACTGGGAAGTGTCCAAGCATCTTGGTAGGGTGTGCTTCCCGACATGATCCCC
1320 1330 1340 1350 1360 1370 1380 1390 1400
ACTTGGTAAAACTGCATGATGAATAGCACCTTAATTTCAAGCAAAATGATTATAATTAAAGTTTTATTTGCTGTAAAAA

FIG. 5B

10 20 30 40 50 60
MKRNSLSVENKIVQLSGAAKQPKVGFYSSLNQTHTHTVLLDWGSLPHHVVLQIFQYLPLL
70 80 90 100 110 120
DRACASSVCRRWNEVFHISDLWRKFELNQSATSSFKSTHPDLIQQIIKKHFAHLQYVS
130 140 150 160 170 180
FKVDSSAESAEAAACDILSQLVNCSIQTLGLISTAKPSFMNVSESHFVSALTVVFINSKSL
190 200 210 220 230 240
SSIKIEDTPVDDPSLKILVANNSDTLRLPKMSSCPHVSSDGILCVADRCQGLRELALNYY
250 260 270 280 290 300
ILTDELFLALSSETHVNLEHLRIDVVSSENPGQIKFHAVKKHSDALIKHSPRVNVVMHFF
310 320 330 340 350 360
LYEEEFETFFKEETPVTHLYFGRSVSKVVLGRVGLNCPRLIELVVCANDLQPLDNELICI
370 380 390 400 410 420
AEHCTNLTA GLSKCEVSCSAFIRFVRLCERRLTQLSVMEEVLIPDEDYSLDEIHTEVSK
430
YLGRVWF PDVMPLW

FIG. 6A

10 20 30 40 50 60
ACATTTTCTAATGTTTACAGAATGAAGAGGAACAGTTTATCTGTTGAGAATAAAATTGTCCAGTTGTCA
70 80 90 100 110 120 130
GGAGCAGCGAAACAGCCAAAAGTTGGGTCTACTCTTCTCTCAACCAGACTCATACACACACGGTTCTT
140 150 160 170 180 190 200
CTAGACTGGGGAGTTTGCCCTCACCATGTAGTATTACAAATTTTTCAGTATCTTCCTTTACTAGATCGG
210 220 230 240 250 260 270
GCCTGTGCATCTTCTGTATGTAGGAGGTGGAATGAAGTTTTTCATATTCTGACCTTTGGAGAAAAGTTT
280 290 300 310 320 330 340
GAATTTGAACCTGAACCAGTCAGCTACTTCATCTTTTAAGTCCACTCATCCTGATCTCATTTCAGCAGATC
350 360 370 380 390 400 410
ATTAAAAAGCATTTTGCTCATCTTCAGTATGTTCAGCTTTAAGGTTGACAGTAGCGCTGAGTCAGCAGAA
420 430 440 450 460 470 480
GCTGCCTGTGATATACTCTCTCAGCTGGTAAATGTTCCATCCAGACCTTGGGCTTGATTCAACAGCC
490 500 510 520 530 540 550
AAGCCAAGTTTCATGAATGTGTGCGAGTCTCATTTTGTGTGTCAGCACTTACAGTTGTTTTATCAACTCA
560 570 580 590 600 610 620
AAATCATTATCATCAATCAAAATTGAAGATACACCAGTGGATGATCCTTCATTGAAGATTCTGTGGCC
630 640 650 660 670 680 690
AATAATAGTGACACTCTAAGACTCCCAAAGATGAGTAGCTGTCTCATGTTTCATCTGATGGAATTCTT
700 710 720 730 740 750
TGTGTAGCTGACCGTTGTCAAGGCCTTAGAGAACTGGCGTTGAATTATTACATCCTAACTGATGAACCTT
760 770 780 790 800 810 820
TTCCTTGCACTCTCAAGCGAGACTCATGTTAACCTTGAACATCTTCGAATTGATGTTGTGAGTGAAAAAT
830 840 850 860 870 880 890
CCTGGACAGATTAAATTTTCATGCTGTTAAAAACACAGTTGGGATGCACTTATTAAACATTCCCCTAGA
900 910 920 930 940 950 960
GTTAATGTTGTTATGCACTTCTTTCTATATGAAGAGGAATTTCGAGACGTTCTTCAAAGAAGAAACCCCT
970 980 990 1000 1010 1020 1030
GTTACTCACCTTTATTTTGGTTCGTTTCAGTCAGCAAGTGGTTTTAGGACGGGTAGGTCTCAACTGTCCT
1040 1050 1060 1070 1080 1090 1100
CGACTGATTGAGTTAGTGGTGTGTCTAATGATCTTCAGCCTCTTGATAATGAACCTATTGTATTGCT
1110 1120 1130 1140 1150 1160 1170
GAACACTGTACAAACCTAACAGCCTTGGGCCTCAGCAAATGTGAAGTTAGCTGCAGTGCCTTCATCAGG
1180 1190 1200 1210 1220 1230 1240
TTTGTAAAGACTGTGTGAGAGAAGGTTAACACAGCTCTCTGTAATGGAGGAAGTTTTGATCCCTGATGAG
1250 1260 1270 1280 1290 1300 1310
GATTATAGCCTAGATGAAATTCACACTGAAGTCTCCAAATACCTGGGAAGAGTATGGTTCCCTGATGTG
1320
ATGCCTCTCTGG

FIG. 6B

10 20 30 40 50 60
MAGSEPRSGTNSPPPPFSDWGRLEAAILSGWKTFWQSVSKDRVARTTSREEVDEAASTLT
70 80 90 100 110 120
RLPIDVQLYILSFLSPHLCQLGSTNHYWNETVRNPILWRYFLLRDLPSSVDWKSLPY
130 140 150 160 170 180
LQILKKPISEVSDGAFFDYMAVYLMCCPYTRASKSSRPMYGAVTSFLHSLIIPNEPRFA
190 200 210 220 230 240
LFGPRLEQLNTSLVLSLLSSEELCPTAGLPQRQIDGIGSGVNFQLNNQHKFNILILYSTT
250 260 270 280 290 300
RKERDRAREEHTSAVNKMFSRHNEGDDRPGSRYSVIPQIQKLCEVVDGFIYVANAIAHAKR
310 320 330 340 350 360
HEWQDEF SHIMAMTDPAFGSSGRPLLVLSCISQGDVKRMPCFYLAHELHLNLLNHPWLIVQ
370 380 390 400 410 420
DTEAETLTGFLNGIEWILEEVESKRAR*FSFQILGTETI*NLLRS*CEYLLSQPTLSCL
430 440 450 460 470 480
FADRLSFGQL*LLCFLYYFYFLP*INYKKRVSVLVFSPKMNLTFFW*FLYFLSF*KY*I

L

FIG. 7A

10 20 30 40 50 60
ATGGCGGAAGCGAGCCGGCAGCGGAACAAATTCGCCGCCGCCGCCCTTCAGCGACTGGGGCCGCCCTG

70 80 90 100 110 120 130
GAGGCGGCCATCCTCAGCGGCTGGAAGACCTTCTGGCAGTCAGTGAGCAAGGATAGGGTGGCGGTACG

140 150 160 170 180 190 200
ACCTCCCGGAGGAGGTGGATGAGGCGGCCAGCACCTGACGCGGCTGCCGATTGTGTACAGCTATAT

210 220 230 240 250 260 270
ATTTTGCTCTTCTTTCACTCATGATCTGTGTCTAGTTGGGAAGTACAAATCATTATTGGAATGAACT

280 290 300 310 320 330 340
GTAAGAAATCCAATTCGTGGAGATACCTTTTGTGAGGGATCTCTCTTCTGGTCTCTGTGTGACTGG

350 360 370 380 390 400 410
AAGTCTCTCCATATCTACAAATCTTAAAAAGCCTATATCTGAGGTCTCTGTATGGTGCATTTTTTGAC

420 430 440 450 460 470 480
TACATGGCAGTCTATCTAATGTGCTGTCCATACACAAGAAGAGCTTCAAAATCCAGCCGCTCTATGTAT

490 500 510 520 530 540 550
GGAGCTGTCACTTCTTTTTTACACTCCCTGATCATTTCCCAATGAACCTCGATTGCTCTGTTTGGACCA

560 570 580 590 600 610 620
CGTTTGGAAACAATTGAATACCTCTTTGGTGTGAGCTTGCTGTCTTCAGAGGAACTTTGGCCCAACAGCT

630 640 650 660 670 680 690
GGTTTGCCCTCAGAGGCAGATTGATGGTATTGGATCAGGAGTCAATTTTCAGTTGAACAACCAACATAAA

700 710 720 730 740 750
TTCAACATTCTAATCTTATATTCAACTACCAGAAAGGAAGAGATAGAGCAAGGGAAGAGCATACAAGT

760 770 780 790 800 810 820
GCAGTTAACAAGATGTTTCAGTCGACACAATGAAGGTGATGATCGACCAGGAAGCCGTTACAGTGTGATT

830 840 850 860 870 880 890
CCACAGATTCAAAAACGTGTGAAGTTGTAGATGGGTTTCATCTATGTTGCAAAATGCTGAAGCTCATAAA

900 910 920 930 940 950 960
AGACATGAATGGCAAGATGAATTTTCTCATATTATGGCAATGACAGATCCAGCCTTTGGGTCTTCGGGA

970 980 990 1000 1010 1020 1030
AGACCATTGTTGGTTTTATCTTGATTTTCTCAAGGGGATGTAAAAAGAAATGCCCTGTTTTTATTGGCT

1040 1050 1060 1070 1080 1090 1100
CATGAGCTGCATCTGAATCTTCTAAATCACCCATGGCTGGTCCAGGATACAGAGGCTGAAACTCTGACT

1110 1120 1130 1140 1150 1160 1170
GGTTTTTTGAATGGCATTGAGTGGATTCTTGAAGAAGTGAATCTAAGCGTGCAAGATGATTCTCTTTT

1180 1190 1200 1210 1220 1230 1240
CAGATCTTGGGAACGAAACCAATTTGAAATTTATTACTAAGGTCGTGATGTGAATATTTGCTCAGTCAG

1250 1260 1270 1280 1290 1300 1310
CCCACCTTGCTCCTGCTTTTTTGCAGATAGGCTTTTCATTGACAGCTATAACTGCTGTGTTTTTATAT

1320 1330 1340 1350 1360 1370 1380
TATTTTTACTTTTTTACCATAAATCAATTACAAGAAAAGAGTTTCAGTCTAGTATTTAGCCCCAAAATG

1390 1400 1410 1420 1430 1440
AACCTTTAAACATTTTTTGGTAATTTTATATTTTCTGTCTTTTTTAAAAATATTAAATTTTGG

FIG. 7B

10 20 30 40 50 60
MSRRPCSCALRPPRCSCSASPSAVTAAGRPRPSDSCKEESSTLSVKMKCDFNCNHVHSGL

70 80 90 100 110 120
KLVKPDDIGRLVSYTPAYLEGSCDKCIKDYERLSCIGSPIVSPRIVQLETESKRLHNKEN

130 140 150 160 170 180
QHVQQTNLNSTNEIEALETSLRYEDSGYSSFSLSQSLSEHEEGSLLEENFGDSLQSCLLQI

190 200 210 220 230 240
QSPDQYPNKNLLPVLHFEKVVCSTLKKNAKRNPKVDREMLKEIIARGNFRLQNIIGRKM

250 260 270 280 290 300
LECVDILSELFRRGLRHVLATILAQLSDMDLINVSKVSTTWKKILEDDKGAFQLYSKAIQ

310 320 330 340 350 360
RVTENNNKFSPHASTREYVMFRTPLASVQKSAAQTSKKDAQTKLSNQGDKGSTYSRHN

370 380 390 400 410 420
EFSEVAKTLKKNESLKACIRCNSPAKYDCYLQRATCKREGCGFDYCTKCLCNHYHTTKDCS

430 440
DGKLLKASCKIGPLPGTKKSKKNLRL

FIG. 8A

10 20 30 40 50 60 70 80 90
AGGTTGCTCAGCTGCCCCGGAGCGGTTCCTCCACCTGAGGCAGACACCACTCGGTGGCATGAGCCGGCGCCCTGCAGCTGCGCCCTACGG
100 110 120 130 140 150 160 170 180
CCACCCCGCTGCTCTGACGCCAGCCCCAGCGCAGTGACAGCCCGCGCGCCCTCGACCTCGGATAGTTGTAAAGAAGAAAGTTCTACCC
190 200 210 220 230 240 250 260 270 280
TTTCTGTCAAAATGAAGTGTGATTTTAATTGTAACCATGTTTCATTCGGACTTAACTGGTAAAACTGATGACATTGGAAGACTAGTTTCCTA
290 300 310 320 330 340 350 360 370
CACCCCTGCATATCTGGAAGGTTCTGTAAAGACTGCATTAAAGACTATGAAAGGCTGTCATGTATTGGGTACCCGATTGTGAGCCCTAGGATT
380 390 400 410 420 430 440 450 460 470
GTACAACTTGAAGTGAAGCAAGCGCTTGCATAACAAGGAAAAATCAACATGTGCAACAGACACTTAATAGTACAAATGAAATAGAAGCACTAG
480 490 500 510 520 530 540 550 560
AGACCAGTAGACTTTATGAAGACAGTGGCTATTCTCTCATTTTCTCTACAAAGTGGCTCAGTGAACATGAAGAAGGTAGCCCTCTGGAGGAGAA
570 580 590 600 610 620 630 640 650
TTTCGGTGACAGTCTACAATCTGCTGTACAAATACAAGGCCAGACCAATATCCCAACAAAACTTGCTGCCAGTTCTTCATTTTGAAAAA
660 670 680 690 700 710 720 730 740 750
GTGGTTTGTTCACATTAAAAAAGAAATGCAAAACGAAATCTTAAAGTAGATCGGGAGATGCTGAAGGAAATATAGCCAGAGGAAATTTTAGAC
760 770 780 790 800 810 820 830 840
TCCAGATATAATTCGCAGAAAAATGGGCTAGAATGTGTAGATATTCTCAGCGAATCTTTTGAAGGGGACTCAGACATGTCTTAGCAACTAT
850 860 870 880 890 900 910 920 930 940
TTTAGCACAACCTCAGTGACATGGACTTAATCAATGTGTCTAAAGTGACCAACTTGAAGAAGATCTTAGAAGATGATAAGGGGGCATTCCAG
950 960 970 980 990 1000 1010 1020 1030
TTGTACAGTAAAGCAATACAAAGAGTTACCGAAAAACAATAAATTTTACCTCATGCTTCAACCAGAGAATATGTTATGTTTCAAGCCCCAC
1040 1050 1060 1070 1080 1090 1100 1110 1120
TGGCTTCTGTTTCAAGAAATCAGCAGCCAGACTTCTCTCAAAAAGATGCTCAAAACCAAGTTATCCAATCAAGGTGATCAGAAAGGTTCTACTTA
1130 1140 1150 1160 1170 1180 1190 1200 1210 1220
TAGTCGACACAATGAATCTCTGAGGTTGCCAAGACATTGAAAAAGAAGGAAAGCCTCAAGGCTGTATTGCTGTAATTCACCTGCAAAATAT
1230 1240 1250 1260 1270 1280 1290 1300 1310
GATTGCTATTTTACAACGGGCAACCTGCAACGAGAGGCTGTGGATTGATTATTGTACGAAGTGTCTGTGTAATTATCATACTACTAAAGACT
1320 1330 1340 1350 1360 1370 1380 1390 1400 1410
GTTCAGATGGCAAGCTCTCAAGCCAGTTGTAAATAGGTCCTGCTGCTGACAAAGAAAAGCAAAAAGAAATTTACGAAGATTGTGATCTCT
1420 1430 1440 1450 1460 1470 1480 1490 1500
TATTAATCAATTGTTACTGATCATGAATGTTAGTTAGAAAAATGTTAGCTTTAACTTAAAAAAATTTGATTGTGATTTTCAATTTTATGTTG
1510 1520 1530 1540 1550 1560 1570 1580 1590
AAATCGGTGTAGTATCTGAGGTTTTTTTCCCCCAGAGATAAAGAGGATAGACAACTCTTAAATATTTTACAATTTAATGAGAAAAAGT
1600 1610 1620 1630 1640 1650 1660 1670 1680 1690
TTAAATTTCTCAATACAAATCAACAATTTAAATATTTTAAAGAAAAAGGAAAGTAGATAGTACTGAGGGTAAAAAAAATGATTCAA
1700 1710 1720 1730 1740 1750 1760 1770 1780
TTTTATGGTAAAGGAAACCATGCAATTTTACCTAGACAGTCTTAAATATGTCGTTTTCATCTGTTAGCATTTCAGACATTTTATGTTCT
1790 1800 1810 1820 1830 1840 1850 1860 1870 1880
CTTACTCAATTGATACCAACAGAAATATCAACTTCTGGAGTCTATTAAATGTGTTGTCACCTTTCTAAAGCTTTTTTTCATGTGTGATTTC
1890 1900 1910 1920 1930 1940 1950 1960 1970
CAAGAAAGTATCCTTTGTAAAACTTGCTTGTTTTCTTATTCTGAAATCTGTTTAAATATTTTGTATACATGTAATATTTCTGTATTTTT
1980 1990 2000 2010 2020 2030 2040 2050 2060
TATATGTCAAAGAAATATGCTCTGTATGTATACATATAAAAAATAATTTTCTCAATAAAATTTGAAGCTTAAAAAAAATCTCGAG
2070
ACTAGTGC

FIG. 8B

10 20 30 40 50 60
ARSGASALRRRRVQVWVLSRPPPGGGDSFRTRRPQRGPGPGGSQAMDAPHSKAALDSINE
70 80 90 100 110 120
LPDNILLELFTHVPAQQLLNCRVCSLWRDLIDLTLWKRKCLRKGFITKDWDQPVADW
130 140 150 160 170 180
KIFYFLRSLHRNLLRNPCAENDMFAWQIDFNGGDRWKVDSLPGAHGTEFPDPKVKKSFTV
190 200 210 220 230 240
SYELCLKWELVDLLADRYWEELDTFRPDIVVKDWFAARADCGCTYQLKVQLASADYFVL
250 260 270 280 290 300
ASFEPFPPVTIQQWNNATWTEVSYTFSDYPRGVRYILFQHGGGRDTQYWAGWYGPRVTNSSI
310 320 330
VVSPKMTRNQASSEAQPGQKHGQEEAAQSPYGAVVQIF

FIG. 9A

10 20 30 40 50 60 70 80 90
GCQCGTTCCGGAGCTTCGGCCCTGCGTAGGAGCGGGTGCCAGGTGTGGGTGCTGAGCCGCCCGCCCTGGAGGGGAGACAGCTTCAGGACAC
100 110 120 130 140 150 160 170 180
GCAGGCCCCAGCGAGGGCCCCGGGGGATCCAGGCCATGGACGCTCCCACTCCAAAGCAGCCCTGGACAGCATTAACGAGCTGCCCGA
190 200 210 220 230 240 250 260 270 280
TAACATCCTGCTGGAGCTGTTACGCCACGTGCCCGCCCGCCAGCTGCTGCTGAACTGCCCGCTGGTCTGCAGCCTCTGGCGGGACCTCATCGAC
290 300 310 320 330 340 350 360 370
CTCCTGACCCTCTGGAAACGCAAGTGCTGCGAAAGGGCTTCATCACCAGGACTGGGACCAGCCCGTGGCCGACTGGAAAAATCTTCTACTTCC
380 390 400 410 420 430 440 450 460 470
TACGGAGCCTGCATAGGAACCTCTGCGCAACCCGTGTGCTGAAAAAGATATGTTTGTCATGGCAAATTGATTTCATGTTGGGGACCGCTGGAA
480 490 500 510 520 530 540 550 560
GGTGGATAGCCTCCCTGGAGCCACGGGACAGAATTTCTGACCCCAAGTCAAGAACTCTTTTGTCACATCCTACGAACGTGCTCAAGTGG
570 580 590 600 610 620 630 640 650
GAGCTGGTGGACCTTCTAGCCGACCGCTACTGGGAGGAGCTACTAGACACATTCCGGCCCGACATCGTGGTTAAGGACTGGTTTGCTGCCAGAG
660 670 680 690 700 710 720 730 740 750
CCGACTGTGGCTGCACCTACCAACTCAAAGTGCAGCTGGCCCTGGCTGACTACTTCTGTTGGCCTCCTTCGAGCCCCACCTGTGACCATCCA
760 770 780 790 800 810 820 830 840
ACAGTGAACAATGCCACATGGACAGAGGTCTCTACACCTTCTCAGACTACCCCGGGGTGTCCGCTACATCCTCTCCAGCATGGGGGACGG
850 860 870 880 890 900 910 920 930 940
GACACCCAGTACTGGGAGGCTGGTATGGGCCCCGAGTCACCAACAGCAGCATTTGTCGTCAGCCCCAAGATGACCAGGAACCGGCTCGTCCG
950 960 970 980 990 1000 1010 1020 1030
AGGCTCAGCCTGGGCGAAGCATGGACAGGAGGAGGCTGCCCAATCGCCCTACGGAGCTGTGTGTCAGATTTTCTGACAGCTGTCCATCCTGTG
1040 1050 1060 1070 1080 1090 1100 1110 1120
TCTGGGTCAGCCAGAGGTTCTCCAGGCAGGAGCTGAGCATGGGGTGGGAGTGGGTCCTGTACACGCGACTCCTGCCCCGGTTCAACCCTA
1130 1140 1150 1160 1170 1180 1190 1200 1210 1220
CCAGCTTGTGGTAACCTTACTGTCACATAGCTCTGACGTTTTGTTGTAATAAATGTTTTTCAGGCCGGGCACTGTGGCTCAGCCCTGTAATCCCAG
1230 1240 1250 1260 1270 1280 1290 1300 1310
CACITTTGGGAGACCGAGGCAGGTGATCAGAGGTGAGGAGACAGACCATCTGGCCAACACGGTGAAACCCCTGTCTACTAAAAATACAA
1320 1330 1340 1350 1360 1370 1380 1390 1400 1410
AAAATTAGCCCGCGTGGTGGCGGGCCCTGTAGTCCAGCTACTCGGGAGGCTGATGCAGAAGAATGGCGTGAACCCGGAAGGCAGAGCTTGC
1420 1430 1440 1450 1460 1470 1480 1490 1500
AGTGAGCCGAGATCAGCCACTGCCTCCAGCCTGGGTGACAGAGCGAGACTCTGGCTCATAAAAAATAATAATAATAATAATAATAATA
1510 1520 1530
AATGGTTTTTCAGTAAAAAAAAAAAAAAAAA

FIG. 9B

10 20 30 40 50 60
MSNTRFTITLNYKDPLTGDEETLASYGIVSGDLICLILHDDIPPPNIPSSSTDSEHSSLQN
70 80 90 100 110 120
NEQPSLATSSNQTSIQDEQPSDSFQGQAAQSGVWNDDSMGLGPSQNFEAESIQDNAHMAEG
130 140 150 160 170 180
TGFYPSEPLLCSESVEGQVPHSLETLYQSADCSDANDALIVLIHLLMLESgyIPQGTEAK
190 200 210 220 230 240
ALSLPEKWKLSGVYKLQYMHHLCEGSSATLTCVPLGNLIVVNATLKINNEIRSVKRLQLL
250 260 270 280 290 300
PESFICKEKLGENVANIYKDLQKLSRLFKDQLVYPLLAFTTRQALNLPNVFGLVVLPLELK
310 320 330 340 350 360
LRIFRLLDVRSVLSLSAVCRDLFTASNDPLLWRFLYLRFDRDNTVRVQDQTDWKELYRKRH
370 380 390 400 410 420
IQRKESPKGRFVLLPSSTHTIPFYPNPLHPRPFPSRLPPGIIGGEYDQRPTLPYVGDP
430 440 450 460 470 480
ISSLIPGPGETPSQLPPLRPRFDPVGPPLPGPNPILPGRGGPNDRFPFRPSRGRPTDGRLS
FM

FIG. 10A

10 20 30 40 50 60 70 80 90
TGGAAATCCCATGGACCATGTCTAATACCCGATTTACAATTACATTGAACCTACAAGGATCCCCCTCACTGGAGATGAAGAGACCTTGGCTTCATA

100 110 120 130 140 150 160 170 180
TGGGATTGTTTCTGGGGACTTGATATGTTTGATTCTTCACGATGACATTCCACCGCCTAATATACCTTCATCCACAGATTCCAGGCAATCTTCA

190 200 210 220 230 240 250 260 270 280
CTCCAGAACAATGAGCAACCCCTCTTTGGCCACCAGCTCCAATCAGACTAGCATACAGGATGAACAACCAAGTGATTTCATTCCAAGGACAGGCAG

290 300 310 320 330 340 350 360 370
CCCAGTCTGGTGTTTGGAAATGACGACGATATGTTAGGGCTAGTCAAAATTTTGAAGCTGAGTCAATTCAAGATAATGGCATATGGCAGAGGG

380 390 400 410 420 430 440 450 460 470
CACAGGTTTCTATCCCTCAGAACCCCTGCTCTGTAGTGAATCGGTGGAAGGGCAAGTGCCACATTCAATTAGAGACCTTGTATCAATCAGCTGAC

480 490 500 510 520 530 540 550 560
TGTTCTGATGCCAATGATGCGTTGATAGTGTGTATACATCTTCTCATGTTGGAGTCAGGTTCATACCTCAGGGCACCGAAGCCAAAGCACTGT

570 580 590 600 610 620 630 640 650
CCCTCCCGGAGAAGTGGAAAGTTGAGCGGGGTGTATAAGCTGCAGTACATGCATCATCTCTGGGAGGGCAGCTCCGCTACTCTCACCTGTGTGCC

660 670 680 690 700 710 720 730 740 750
TTTGGGAAACCTGATTGTTGTAAATGCTACACTAAAAATCAACAATGAGATTAGAAGTGTGAAAAGATTGCAGCTGCTACCAGAATCTTTTATT

760 770 780 790 800 810 820 830 840
TGCAAGAGAAACTAGGGGAAAAATGTAGCCAACATATACAAAGATCTTCAGAACTCTCTCGCCTCTTTAAAGACCAGCTGGTGATCTCTCTTC

850 860 870 880 890 900 910 920 930 940
TGGCTTTTACCCGACAAGCACTGAACCTACCAAAATGATTTGGGTGGTTCCTCCCATTCGGAAGTGAAGTACCGGATCTTCCGACTTCTGGA

950 960 970 980 990 1000 1010 1020 1030
TGTTCTGTTCCGCTCTTGTCTTGTCTGCGGTTTGTCTGACCTCTTTACTGCTTCAAAATGACCCACTCTCTGTGGAGGTTTTTATATCTCGGTGAT

1040 1050 1060 1070 1080 1090 1100 1110 1120
TTTCGAGACAATACTGTCAGAGTTCAAGACACAGATTGGAAAGAAGTGTACAGGAAGAGGCACATACAAAGAAAAGAAATCCCCGAAAGGGCGGT

1130 1140 1150 1160 1170 1180 1190 1200 1210 1220
TTGTGCTGCTCCGCTGCTCAACCCACACCATTCATTCTATCCCAACCCCTTGACCCCTAGGCCATTTCCTAGCTCCCGCCTTCTCTCCAGG

1230 1240 1250 1260 1270 1280 1290 1300 1310
AATTATCGGGGGTGAATATGACCAAGACCAACTTCCCTATGTTGGAGACCAATCAGTTCACTCATTCTGCTGCTGGGGAGACGCCACG

1320 1330 1340 1350 1360 1370 1380 1390 1400 1410
CAGTTACCTCCACTGAGACCAGCTTTGATCCAGTTGGGCCACTTCCAGGACCTAACCCCATCTTGCCAGGGCGAGGGCGGCCCAATGACAGAT

1420 1430 1440 1450 1460 1470 1480 1490 1500
TTCCCTTTAGACCCAGCAGGGGTGGCCAACTGATGGCCGCTGTCATTTCATGTGATTGATTGTAAATTCATTTCGGAGCTCCATTGTTTT

1510 1520 1530 1540 1550 1560 1570 1580 1590
TGTTTCTAAACTACAGATGTCACCTCTTGGGGTCTGATCTCGAGTGTATTTTCTGATTGTGGTGTGAGAGTTGCACTCCACAGAAACCTTTT

1600 1610 1620 1630 1640 1650 1660 1670 1680 1690
AAGAGATACATTTATAGCCCTAGGGGTGGTATGACCAAGGTTCTCTGTGACAAGGTTGGCCTTGGGAATAGTTGGCTGCCAATCTCCCTGC

1700 1710 1720 1730 1740 1750 1760
TCTTGGTTCTCTCTAGATTGAAGTTGTTTTCTGATGCTGTTCTTACCAGATTAAAAAAGTGTAAATT

FIG. 10B

10	20	30	40	50	60
ETSKLG*SAVLAPAAGGTLSSSEGRSAVSGILIAVTSTGVDK*SLNQLLHGLGTSSRLSHF					
70	80	90	100	110	120
PFG*KSPPRGQFVAAAVEIAGRSGLQMGQGLWRVVRNQQLQQEGYSEQGYLTREQSRRMA					
130	140	150	160	170	180
ASNISNTNHRKQVQGGIDIYHLLKARKSKEQEGFINLEMLPPELSFTILSYLNATDLCLA					
190	200	210	220	230	240
SCVWQDLANDELLWQGLCKSTWGHCSIYNKNPPLGFSFRKXYMQLDEGSLTFNANPDEGV					
250	260	270	280	290	300
NYFMSKGILDDSPKEIAKFIFCTRNLNWKLRILYLDERRDVLDDLVTLHNFRNQFLPNAL					
310	320	330	340	350	360
REFFRHIHAPEERGEYLETLITKFSHRFCACNPDLRELGLSPDAVYVLCYSLILLSIDL					
370	380	390	400	410	420
TSPHVKNKMSKREFIRNTRRAAQNISEDFVGHLVDNIYLIGHVAA*KAQLLGLQFLLQTK					
430	440	450	460	470	480
ATQGLSRYGGYISAGHCSLSIQSSFSVQPFLLPFSILVISLGN*IILQNFS*FCLSRFA					
490	500	510	520	530	540
QSRATV*HSC*RMIN*HYTLKDGVEFVH*ICLKNFIHFHSLYKYHVMCTYLTKEIYSHNYF					
550	560	570	580	590	600
IVKILTKVFPFLSN*VLKFI*F*SETIVXVKVRSDFRQKPIPASFSFKL*RVLICYYITM					
610	620	630	640	650	
QNWQLFL*YKFII*FFILKTGLIKSR*VL*TI*DF*NIKIYDLHS*E*NKIXLELW					

FIG. 11A

10 20 30 40 50 60 70 80 90
GGAAACGTCAAAATGGGATAGTCGGCAGTTCTGGCCCCCTGCAGCTGGAGGTACCCCTGAGTTCTGAGGTCGTAGTCTGTTCTGGTATCTC
100 110 120 130 140 150 160 170 180
ATCGCGGTCACTCTACCGGTGTGGACAAGTAAAGTTTGAATCAGCTTCTCCATGGCTGGGCACCAGTTCCCGGCTGAGCCATTTCTCTTTG
190 200 210 220 230 240 250 260 270 280
GCTAAAGTCCCGCCAGAGGCCAATTCTGCGCGGGCGGTGGAGATGCGAGGTCGCTCAGGCTTGCGAGATGGGTCAAGGGTTGTGGAGAGT
290 300 310 320 330 340 350 360 370
GGTCAGAAACCAGCAGCTGCAACAAGAGGCTACAGTGAGCAAGGCTACCTCAACCAGAGAGCAGAGCAGGAGAATGGCTGCGAGCAACATTTCT
380 390 400 410 420 430 440 450 460 470
AACACCAATCATCGTAAACAAGTCCAAGGAGGCATTGACATATATCATCTTTTGAAGCAAGGAAATCGAAAGAAGGAGGATTTCATTAAAT
480 490 500 510 520 530 540 550 560
TGCAATGTGCTCTGAGCTAAGCTTTACCATCTTGTCTACCTGAATGCAACTGACCTTTGCTTGGCTTCATGTGTTTGGCAGGACCTTGC
570 580 590 600 610 620 630 640 650
GAATGATGAACCTCTCTGCAAGGGTTGTGCAAAATCCACTTGGGGTCACTGTTCCATATACAATAAGAACCACCTTTAGGATTTTCTTTTAGA
660 670 680 690 700 710 720 730 740 750
AAATGTATATGCACTGATGAAGGCAGCCTCACCTTTAATGCCAACCCAGATGAGGGAGTGAACACTTTATGTCCAAGGGTATCCTGGATG
760 770 780 790 800 810 820 830 840
ATTGCCCAAAGGAATAGCAAAAGTTTATCTTCTGTACAAGAACCTAAATGGAAAAAAGTGAATCTATCTTGATGAAGGAGAGATGTCTT
850 860 870 880 890 900 910 920 930 940
GGATGACCTTGTAACATTGCATAATTTTAGAAATCAGTTCTTGCCAAATGCACTGAGAGAATTTTTTCGTATATCCATGCCCTGAAGAGCGT
950 960 970 980 990 1000 1010 1020 1030
CGAGAGTATCTTGAACCTCTTATAACAAAGTTCTCACATAGATTCTGTGCTTGCAACCCTGATTTAATGCGAGAAGTTGGCCTTAGTCTGATG
1040 1050 1060 1070 1080 1090 1100 1110 1120
CTGCTATGTACTGTGCTACTCTTTGATTCTACTTTCCATTGACCTCACTAGCCCTCATGTGAAGAATAAAATGCAAAAAGGGGAATTTATTGG
1130 1140 1150 1160 1170 1180 1190 1200 1210 1220
AAATACCCGTCGCCGTGCTCAAAATATTAGTGAAGATTTGTAGGGCATCTTTATGACAATATCTACCTTATTGGCCATGTGGCTGCATAAAAA
1230 1240 1250 1260 1270 1280 1290 1300 1310
GCACAATTGCTAGGACTTCAGTTTTTACTTCAGACTAAAGCTACCCAAGGACTTAGCAGATATGGGGTTACATCAGTGTGCTCATTGTAGCC
1320 1330 1340 1350 1360 1370 1380 1390 1400 1410
TGAGTATACAATCAAGCTTCAGTGTGCAACCTTTTTTCTTTTGCCATTTCTATTTTAGTAATTTCTTGGGAACTAAATAATTTGCAGAA
1420 1430 1440 1450 1460 1470 1480 1490 1500
TTTTTCTAAATTTGTTTATCAGTTTTCACAAAGCAGAGCCACTGTCTAACACAGCTGTTAACGAATGATAAAGTACATTATACTCTAAAA
1510 1520 1530 1540 1550 1560 1570 1580 1590
GATGGTGTATTGTGCATTAGATTTCCTGAAAACTTTATCCATTTCATTCTTTATACAAATACCATGTAATGTGTACATATTTAACTAAAG
1600 1610 1620 1630 1640 1650 1660 1670 1680 1690
AGATTTATAGTCATAATTATTTTATTGTAAAGATTTTAACTAAAGTTTTCTCTCTCAAACTGAGTTCTGAAATTTATTTGATTCTGATC
1700 1710 1720 1730 1740 1750 1760 1770 1780
TGAAACTATTGTCTYCGTAAAGTTAGATCTGACTTCAGRCAGAAACCAATACCAGCTTCCTTTTCTTTAACTTTGAGAGTGTGATTGTG
1790 1800 1810 1820 1830 1840 1850 1860 1870 1880
TACTATATTACTATGCAAAAGTGGCAGTTATTTTATAATATAAATTTATAATTTGATTTTTATTTTAAAACTGGGTAAATCAAGCTCTCGGT
1890 1900 1910 1920 1930 1940 1950 1960 1970
AAGTCCCTTTAAACCATTTAGGATTTTAAAAACATCAAAATTTATGATTTCATTATAGGAATAAAATAAAATATYATTAGAACTCTGGT

FIG. 11B

10 20 30 40 50 60
MAAAAVDSAMEVVPALAEAAPEVAGLSCLVNLPGEVLEYILCCGSLTAADIGRVSSTCR
70 80 90 100 110 120
RLRELCQSSGKVWKEQFRVRWPSLMKHYSPTDYVNWLEEYKVRQKAGLEARKIVASFSCR
130 140 150 160 170 180
FFSEHVPCNGFSDIENLEGPEIFFEDELVCILNMEGRKALTWKYYAKKILYYLRQQKILN
190 200 210 220 230 240
NLKAFLLQPPDDYESYLEGAVYIDQYCNPLSDISLKDIQAQIDSIVELVCKTLRGINSRHP
250 260 270 280 290 300
SLAFKAGESSMIMEIELQSQVLDAMNYVLYDQLKFKGNRMDYYNALNLYMHQVLIIRRTGI
310 320 330 340 350 360
PISMSLLYLTIARQLGVPLEPVNFP SHFLLRWCQGAEGATLDIFDYIYIDAFGKGKQLTV
370 380 390 400 410 420
KECEYLIGQHVTAAALYGVVNVKKVLQRMVGNLLSLGKREGIDQSYQLLRDSL DLYLAMYP
430 440 450 460 470 480
DQVQLLLLQARLYFHLGIWPEKVL DILQHIQTLDPGQHGA VG YLVQHTLEHIERKKEEVG
490 500 510 520 530 540
VEVKLRSDCKHRDVCYSIGLIMKHKRYGYN CVIYGWDP TCMMGHEWIRNMNVHSLPHGHH
550 560 570 580 590 600
QPFYNVLVEDGSCRYAAQENLEYNVEPQEISHPDVGRYFSEFTGTHYIPNAELEIRYPED
610 620
LEFVYETVQNIYSAKKENIDE

FIG. 12A

FIG. 12B

10 20 30 40 50 60
RSTGFRRAGEWSR*XLAASPGXLRRPAXTFVLSNLAEVVERVLTF LPAKALLRVACVCR
70 80 90
LWRECVRRVLRTHRSVTWISAGLAEAGHLXGH

FIG. 13A

10 20 30 40 50 60
CCGTAGTACTGGNTTCCGGCGGGCTGGTGAGGAATGGAGCCGGTAGNTGCTTGCGGCGAG

70 80 90 100 110 120
TCCCGGGNTCCTCCGTAGACCCGCGGANACCTTCGTGTTGAGTAACCTGGCGGAGGTGGT

130 140 150 160 170 180
GGAGCGTGTGCTCACCTTCCTGCCCCGCCAAGGCGTTGCTGCGGGTGGCCTGCGTGTGCCG

190 200 210 220 230 240
CTTATGGAGGGAGTGTGTGCGCAGAGTATTGCGGACCCATCGGAGCGTAACCTGGATCTC

250 260 270
CGCAGGCCTGGCGGAGGCCGGCCACCTGGNNGGGGCATT

FIG. 13B


```

      10      20      30      40      50      60
RPRPVQQQQQQPPQPPPPQPPQQQPPQPPPPQPPPPQPPPPPPPPPLPQERNNVG

      70      80      90      100      110      120
ERDDDVPA DMVAEESGPGAQNSPYQLRRKTL LPKRTACPTKNSMEGASTSTTENFGHRAK

      130      140      150      160      170      180
RARVSGKSQDLSAAPAEQYLQEKLPDEVVLKIFS YLLEQDL CRAACVCKRFSELANDPNL

      190
WKRLYMEVF EYTRPMMH

```

FIG. 14A

10 20 30 40 50 60
GCGGCCGCGCCCGGTGCAGCAACAGCAGCAGCAGCCCCCGCAGCAGCCGCGCCGCGCAGCC

70 80 90 100 110 120
GCCCCAGCAGCAGCCGCCCCAGCAGCAGCCTCCGCCGCCGCCGCGCAGCAGCAGCAGCAGCA

130 140 150 160 170 180
GCAGCCTCCGCCGCCGCCACCGCCGCCCTCCGCCCTGCCTCAGGAGCGGAACAACGTCGG

190 200 210 220 230 240
CGAGCGGGATGATGATGTGCCTGCAGATATGGTTGCAGAAGAATCAGGTCCTGGTGCACA

250 260 270 280 290 300
AAATAGTCCATACCAACTTCGTAGAAAACTCTTTGCCGAAAAGAACAGCGTGTCCCAC

310 320 330 340 350 360
AAAGAACAGTATGGAGGGCGCCTCAACTTCAACTACAGAAAACTTTGGTCATCGTGCAAA

370 380 390 400 410 420
ACGTGCAAGAGTGTCTGGAAAATCACAAGATCTATCAGCAGCACCTGCTGAACAGTATCT

430 440 450 460 470 480
TCAGGAGAACTGCCAGATGAAGTGGTTCTAAAAATCTTCTTACTTGCTGGAACAGGA

490 500 510 520 530 540
TCTTTGTAGAGCAGCTTGTGTATGTAAACGCTTCAGTGAACCTTGCTAATGATCCCAATTT

550 560 570 580 590
GTGGAAACGATTATATATGGAAGTATTTGAATATACTCGCCCTATGATGCAT

FIG. 14B

10 20 30 40 50 60
RPRPGLRGGRAPCEVTMEAGGLPLELWRMILAYLHLPDLGRCSLVCRAWYELILSLDSTR
70 80 90 100 110 120
WRQLCLGCTECRHPNWPNQPDVEPESWREAFKQHYLASKTWTKNALDLESSICFSLFRRR
130 140 150 160 170
RERRTLVGPGREFDSLGSALAMASLYDRIVLFPGVYEEQGEIILKVPVEIVGQGKLG

FIG. 15A

10 20 30 40 50 60
GCGGCCGCGGCCCGGACTCCGCGGTGGGCGAGCGCCCTGTGAGGTGACCATGGAGGCTGG
70 80 90 100 110 120
TGGCCTCCCCTTGGAGCTGTGGCGCATGATCTTAGCCTACTTGCACCTTCCCGACCTGGG
130 140 150 160 170 180
CCGCTGCAGCCTGGTATGCAGGGCCTGGTATGAACTGATCCTCAGTCTCGACAGCACCCG
190 200 210 220 230 240
CTGGCGGCAGCTGTGTCTGGGTTGCACCGAGTGCCGCCATCCCAATTGGCCCAACCAGCC
250 260 270 280 290 300
AGATGTGGAGCCTGAGTCTTGGAGAGAAGCCTTCAAGCAGCATTACCTTGCATCCAAGAC
310 320 330 340 350 360
ATGGACCAAGAATGCCTTGGACTTGGAGTCTTCCATCTGCTTTTCTCTATTCCGCCGGAG
370 380 390 400 410 420
GAGGGAACGACGTACCCTGAGTGTGGGCCAGGCCGTGAGTTTGACAGCCTGGGCAGTGC
430 440 450 460 470 480
CTTGCCCATGGCCAGCCTGTATGACCGAATTGTGCTCTTCCCAGGTGTGTACGAAGAGCA
490 500 510 520 530
AGGTGAAATCATCTTGAAGGTGCCTGTGGAGATTGTAGGGCAGGGGAAGTTGGGTGA

FIG. 15B

10 20 30 40 50 60
ETETAPLTLESLPTDPLLLILSFLDYRDLINCCYVSRRLSQLSSHDPWRRHCKKYWLIS
70 80 90 100 110 120
EEEKTQKNQCWKSLEFIDTYSVGRYIDHYAAIKKASGMISRNIWSPGVLGWVLSLKEGCS
130 140 150 160 170 180
RGRPRCCGSADWAASFLDDYRCSYRIHNGQKLVGSWGYWEAWHCLITIVLKIC*TSIQLP
190 200 210 220 230 240
EIPAETGTEILSPFNFCIHTGLSQYIAVEAAEG*NKNEVFYQCQTVERVFKYGIKMCSDG
250
CINGMH*VFS

FIG. 16A

10 20 30 40 50 60
GAGACCGAGACGGCGCCGCTGACCCTAGAGTCGCTGCCCACCGATCCCCTGCTCCTCATC

70 80 90 100 110 120
TTATCCTTTTGGACTATCGGGATCTAATCAACTGTTGTTATGTCAGTCGAAGATTAAGC

130 140 150 160 170 180
CAGCTATCAAGTCATGATCCGCTGTGGAGAAGACATTGCAAAAAATACTGGCTGATATCT

190 200 210 220 230 240
GAGGAAGAGAAAACACAGAAGAATCAGTGTTGGAAATCTCTCTTCATAGATACTTACTCT

250 260 270 280 290 300
GATGTAGGAAGATACATTGACCATTATGCTGCTATTAAAAAGGCCTCGGGAATGATCTCA

310 320 330 340 350 360
AGAAATATTTGGAGCCCAGGTGTCCTCGGATGGGTTTTATCTCTGAAAGAGGGGTGCTCG

370 380 390 400 410 420
AGAGGAAGACCTCGATGCTGTGGAAGCGCAGATTGGGCTGCAAGTTTCTGACGATTAT

430 440 450 460 470 480
CGATGTTTCATACCGAATTCACAATGGACAGAAGTTAGTTGGTTCCTGGGGTTATTGGGAA

490 500 510 520 530 540
GCATGGCACTGTCTAATCACTATCGTTCTGAAGATTTGTTAGACGTCGATACAGCTGCCG

550 560 570 580 590 600
GAGATTCCAGCAGAGACAGGGACTGAAATACTGTCTCCCTTTAACTTTTGCATACATACT

610 620 630 640 650 660
GGTTTGAGTCAGTACATAGCAGTGAAGCTGCAGAGGGTTGAAACAAAAATGAAGTTTTC

670 680 690 700 710 720
TACCAATGTCAGACAGTAGAACGTGTGTTTAAATATGGCATTAAAGATGTGTTCTGATGGT

730 740 750
TGTATAAATGGCATGCATTAGGTATTTTCAG

FIG. 16B

10 20 30 40 50 60
GSGFRAGGWPLTMPGKHQHFQEPEVGCCGKYFLFGFNIVFWVLGALFLAIGLWAWGEKGV
70 80 90 100 110 120
LSNISALTDLGGLDPVWLVCGSWRRHVGAGLCWAAIGALRENTFLLKFFXXFLGLIFFLE
LA

FIG. 17A

10 20 30 40 50 60
GGCTCCGGTTTCCGGGCCGGCGGGTGGCCGCTCACCATGCCCCGNAAGCACCAGCATTTTC

70 80 90 100 110 120
CAGGAACCTGAGGTTCGGCTGCTGCGGGAAATACTTCCTGTTTGGCTTCAACATTGTCTTC

130 140 150 160 170 180
TGGGTGCTGGGAGCCCTGTTCTGGCTATCGGCCTCTGGGCCTGGGGTGAGAAGGGCGTT

190 200 210 220 230 240
CTCTCGAACATCTCAGCGCTGACAGATCTGGGAGGCCTTGACCCCGTGTGGCTTGTTTGT

250 260 270 280 290 300
GGTAGTTGGAGGCGTCATGTCGGTGCTGGGCCTTGCTGGGCTGCAATTGGGGCCCTCCGG

310 320 330 340 350 360
GAGAACACCTTCCTGCTCAAGTTTTCTNCGNGTTCCTCGGTCTCATCTTCTTCTGAG

CTGGCAAC

FIG. 17B

10 20 30 40 50 60
AAAAAAYLDELPEPLLLRVLAALPAAELVQACRLVCLRWKELVDGAPLWLLKCQQEGLP
70 80 90 100 110 120
EGGVEEERDHWQQFYFLSKRRRNLLRNPCGEEDLEGWCDVEHGGDGWRVEELPGDSGVEF
130 140 150 160 170 180
THDES VKKYFASSFEWCRKAQVIDLQAEGYWEELDTTQPAIVVKDWYSGRSDAGCLYEL
190 200 210 220 230 240
TVKLLSEHENVLAEFSSGQVAVPQSDGGGWMEISHTFTDYGPGVRFVRFEHGGQGSVYW
250
KGWFGARVTNSSVWVEP*

FIG. 18A

10 20 30 40 50 60
GCGGCGGCGCGCGCGCTACCTGGACGAGCTGCCCGAGCCGCTGCTGCTGCGCGTGCTGGCCGCACTG
70 80 90 100 110 120 130
CCGGCCGCGCGAGCTGGTGCAGGCCTGCCGCTGGTGTGCCTGCGCTGGAAGGAGCTGGTGGACGGCGCC
140 150 160 170 180 190 200
CCGCTGTGGCTGCTCAAGTGCCAGCAGGAGGGGCTGGTGGCCGAGGGCGGCGTGAGGAGGAGCGCGAC
210 220 230 240 250 260 270
CACTGGCAGCAGTTCTACTTCCTGAGCAAGCGGCGCCGCAACCTTCTGCGTAACCCGTGTGGGGAAGAG
280 290 300 310 320 330 340
GACTTGGAAGGCTGGTGTGACGTGGAGCATGGTGGGGACGGCTGGAGGGTGGAGGAGCTGCCTGGAGAC
350 360 370 380 390 400 410
AGTGGGGTGGAGTTCACCCACGATGAGAGCGTCAAGAAGTACTTCGCCTCCTCCTTTGAGTGGTGTGCG
420 430 440 450 460 470 480
AAAGCACAGGTCAATTGACCTGCAGGCTGAGGGCTACTGGGAGGAGCTGCTGGACACGACTCAGCCGGCC
490 500 510 520 530 540 550
ATCGTGGTGAAGGACTGGTACTCGGGCCGAGCGACGCTGGTTCCTCTACGAGCTCACCCTTAAGCTA
560 570 580 590 600 610 620
CTGTCCGAGCACGAGAACGTGCTGGCTGAGTTCAGCAGCGGGCAGGTGGCAGTGCCCCAAGACAGTGAC
630 640 650 660 670 680 690
GGCGGGGGCTGGATGGAGATCTCCACACCTTCACCGACTACGGGCGGGCGTCCGCTTCGTCCGCTTC
700 710 720 730 740 750
GAGCACGGGGGGCAGGGCTCCGTCTACTGGAAGGGCTGGTTCGGGGCCCGGGTGACCAACAGCAGCGTG
760 770
TGGGTAGAACCCTGA

FIG. 18B

10 20 30 40 50 60
MGEKAVPLRRRRVKRSCPSCGSELGVEEKRGKGNPISIQLFPPPELVEHIISFLPVRDLV
70 80 90 100 110 120
ALGQTCRYFHEVCDGEGVWRRICRRLSPRLQDQDTKGLYFQAFGGRRRCLSKSVAPLLAH
130 140 150 160 170 180
GYRRLPTKDHVFILDYVGTLLFFLKNALVSTLGQMOWKRACRYVVLCRGAKDFASDPRCD
190 200 210 220 230 240
TVYRKLYVLATREPQEVVGTSSRACDCVEVYLQSSGQRVFKMTFHHSMTFKQIVLVGQ
250 260 270 280 290 300
ETQRALLLLEEGKIYSLVVNETQLDQPRSYTVQLALRKVSHYLPHLRVACMTSNQSSTL
310
YVTDPILCSWLQPPWPGG

FIG. 19A

10 20 30 40 50 60
ATGGGCGAGAAGGCGGTCCCTTTGCTAAGGAGGAGCGGGTGAAGAGAAGCTGCCCTTCTTGTGGCTCG

70 80 90 100 110 120 130
GAGCTTGGGGTTGAAGAGAAGAGGGGAAAGGAAATCCGATTTCATCCAGTTGTTCCCCCAGAGCTG

140 150 160 170 180 190 200
GTGGAGCATATCATCTCATTCCTCCCAGTCAGAGACCTTGTTGCCCTCGGCCAGACCTGCCGCTACTTC

210 220 230 240 250 260 270
CACGAAGTGTGCGATGGGGAAGGCGTGTGGAGACGCATCTGTGCGAGACTCAGTCCGCGCCTCCAAGAT

280 290 300 310 320 330 340
CAGGACACGAAGGGCCTGTATTTCCAGGCATTTGGAGGCCGCCCGATGTCTCAGCAAGAGCGTGGCC

350 360 370 380 390 400 410
CCCTTGCTAGCCACGGCTACCGCCGCTTCTTGCCACCAAGGATCACGTCTTCATTCTTGACTACGTG

420 430 440 450 460 470 480
GGGACCCTCTTCTTCCTCAAAAATGCCCTGGTCTCCACCCTCGGCCAGATGCAGTGAAGCGGGCCTGT

490 500 510 520 530 540 550
CGCTATGTTGTGTTGTGTCGTGGAGCCAAGATTTGCCTCGGACCCAAGGTGTGACACAGTTTACCGT

560 570 580 590 600 610 620
AAATACCTCTACGTCTTGGCCACTCGGGAGCCGAGGAAGTGGTGGGTACCACCAGCAGCCGGGCCTGT

630 640 650 660 670 680 690
GACTGTGTTGAGGTCTATCTGCAGTCTAGTGGGCAGCGGGTCTTCAAGATGACATTCCACCACTCAATG

700 710 720 730 740 750
ACCTTCAAGCAGATCGTGCTGGTTGGTCAGGAGACCCAGCGGGCTCTACTGCTCCTCACAGAGGAAGGA

760 770 780 790 800 810 820
AAGATCTACTCTTTGGTAGTGAATGAGACCCAGCTTGACCAGCCACGCTCCTACACGGTTCAGCTGGCC

830 840 850 860 870 880 890
CTGAGGAAGGTGTCCCACTACCTGCCTCACCTGCGCGTGGCCTGCATGACTTCCAACCAGAGCAGCACC

900 910 920 930 940 950
CTCTACGTCACAGATCCTATTCTGTGCTCTTGGCTACAACCACCTTGGCCTGGTGGATGA

FIG. 19B

10 20 30 40 50 60
RGGSEGRGRGREKRARGARRKRKQGGREARAADGEGGSGPGAEGARTRPREEAEGGGSV

70 80 90 100 110 120
EEGARGIIKGDEGSVGAGKEAQGRKYGKEEWRVRARRREGARPGRVQGGQVWAYIPGT

130 140 150 160 170 180
GAAMAAAAREEEEEAAARESAACPAAGPALWRLPEVLLMHMCSYLDMRALGRLAQVYRWLW

190 200 210 220 230 240
HFTNCDLLRRQIAWASLNSGFTRLGTNLMTSVPVKVSQNWIVGCCREGILLKWRC SQMPW

250 260 270 280 290 300
MQLEDDALYISQANFILAYQFRPDGASLNRQPLGVSAGHDEDVCHFVLATSHIVSAGGDG

310 320 330 340 350 360
KIGLGKIHSTFAAKYWAHEQEVNVCVCKGGIISFGSRDRTAKVWPLASGQLGQCLYTIQT

370 380 390 400 410 420
EDQIWSVAIRPLLSSFVTGTACCGHFSPLKIWDLNSGQLMTHLDRDFPPRAGVLDVIYES

430 440 450 460 470 480
PFALLSCGYDTYVRYWDCRTSVRKCMEWEEPHNSTLYCLQTDGNHLLATGSSFYSVVRL

490 500 510 520 530
WDRHQRACPHTFPLTSTRLGSPVYCLHLTKHLYAALSYNLHVLDIQNP*

FIG. 20A

CGAGGGGGAAGCGAAGGAAGGGGAAGAGGAAGGGAAAAGCGAGCGAGAGGGGCAAGCGGGAAGAGGAAGCAGGGCGGAAGGGGAAGCCCGGGCGG
100 110 120 130 140 150 160 170 180
CAGACGGCGAAGGAGGCAGCGGGCGGGGCTGAGGCGGGAGCGAGGACACGCCCAAGAGAGGAAGCAGAGGGAGGCGGAAGCCTGGAGGAAGG
190 200 210 220 230 240 250 260 270 280
GGCGAGAGGCATCATCAAGGAGATGAGGGGAGCGTAGGGGCGGGAAAGAGGCACAAAGGAAGAAAGTATGGGAAGGAGGAATGGAGGGTCAGG
290 300 310 320 330 340 350 360 370
GCTAGCGCGGGGAGGGGCGCCAGGCCGGGAAGAGTACAGGACAAGGAGGTGAGGTTTGGGCTACATCCCGGGGACAGGGGCGGCCATGGCGG
380 390 400 410 420 430 440 450 460 470
CGGCAGCCAGGGAGGAGGAGGAGGCGGCTCGGGAGTCAGCCCGCTGCCCGCTCGGGGGCCAGCGCTCTGGCGCTGCCGGAAGTGCTGCT
480 490 500 510 520 530 540 550 560
GCTGCACATGTGCTCTACCTCGACATGCGGGCCCTCGGGCCCTGCGCCAGGTGTACCGCTGGCTGTGGCACTTCACCAACTGCGACCTGCTC
570 580 590 600 610 620 630 640 650
CGGGCCAGATAGCCTGGCGCTCGCTCAACTCCGGCTTCACCGCGCTCGGCACCAACTGTATGACAGTGTCCAGTGAAGGTGTCTCAGAACT
660 670 680 690 700 710 720 730 740 750
GGATAGTGGGGTCTCGCGAGAGGGGATTCTGCTGAAGTGGAGATGCAGTCAGATGCCCTGGATGCAGCTAGAGGATGATGCTTTGTACATATC
760 770 780 790 800 810 820 830 840
CCAGGCTAATTTTCATCTCGGCTACCACTTCCGTCCAGATGCTGCGAGCTTGAACCGTCAGCGCTCTGGGAGTCTCTGCTGGGCATGATGAGGAC
850 860 870 880 890 900 910 920 930 940
GTTTGCCACTTTGTGCTGGCCACCTCGCATATTGTCAGTGCAGGAGGAGATGGGAAGATTGGCCTTGGTAAGATTACAGCACTTCCCTGCCA
950 960 970 980 990 1000 1010 1020 1030
AGTACTGGGCTCATGAACAGGAGGTGAACGTGTGTTGATTGCAAGGGGCGCATCATATCATTGGCTCCAGGGACAGGACGGCCAAGGTGTGGCC
1040 1050 1060 1070 1080 1090 1100 1110 1120
TTTGCCCTCAGGGCAGCTGGGGCAGTGTATTATACACCATCCAGACTGAAGACCAATCTGGTCTGTGCTATCAGGCCATTACTCAGCTCTTTT
1130 1140 1150 1160 1170 1180 1190 1200 1210 1220
GTGACAGGGACGGCTTGTGTGGGCACTTCTCACCCCTGAAAATCTGGGACCTCAACAGTGGGCGAGCTGATGACACACTTGGACAGAGACTTTC
1230 1240 1250 1260 1270 1280 1290 1300 1310
CCCCAAGGGCTGGGGTGTGGATGTATATAGTCCCTTTCCGACTGCTCTCTGTGGCTATGACACCTATGTTGCTACTGGGACTGCGG
1320 1330 1340 1350 1360 1370 1380 1390 1400 1410
CACCAGTGTCCGGAATGTGTATGGAGTGGGAGGAGCCCCACAACAGCACCTGTACTGCTGCAGACAGATGGCAACCACTTGCTTGGCACA
1420 1430 1440 1450 1460 1470 1480 1490 1500
GGTTCCTCTCTATAGCGTTGTACGGCTGTGGGACCGGCACCAAGGCGCTGCCCGCACACCTTCCCGCTGACGTGACCCGCGCTCGGCAGCC
1510 1520 1530 1540 1550 1560 1570 1580 1590
CTGTGTACTGCTGCATCTCACCACCAAGCATCTCTATGCTGGCTGTCTTACAACCTCCAGCTCTGGATATTCAAAACCGGTGA

FIG. 20B

10 20 30 40 50 60
LILTSVLLFQRHGYCTLGEAFNRDLDFSSAIQDIRTFNYVVKLLQLIAKSQLTSLSGVAQK

70 80 90 100 110 120
NYFNILDKIVQKVLDDHHNPRLIKDLLQDLSSTLCILIRGVGKSVLVGNINIWICRLETI

130 140 150 160 170 180
LAWQQQLQDLQMTKQVNNGLTSLDLPLHMLNNILYRFSDGWDIITLGQVTPTLYMLSEDR

190 200 210 220 230 240
QLWKKLCQYHFAEKQFCRHLILSEKGHIEWKLMYFALQKHYPKEQYGDTLHFRCRHSIL

250 260 270
FWKDSGHPCTAADPDSCFTPVSPQHFIDLFKF

FIG. 21A

10 20 30 40 50 60
GCATTGCTATAATTTTACTATACTCTCATCTAAATCTAAAATCAGTCTTCAAAATAAAAACAAATTGTC

70 80 90 100 110 120 130
CTTTGCCAAAAATTTTTTAATCGCACAAATTAATGACATTAAGTCCAATTCTTTTGGCTAATTGAC

140 150 160 170 180 190 200
TAATTTTAACTTCTGTGTTGCTTTTCCAGAGGCATGGCTATTGCACCTTGGGAGAAGCCTTTAATCGGT

210 220 230 240 250 260 270
TAGACTTCTCAAGTGCAATTCAAGATATCCGAACGTTCAATTATGTGGTCAAAGTGTGTCAGCTAATTG

280 290 300 310 320 330 340
CAAAATCCCAGTTAACTTCATTGAGTGGCGTGGCACAGAAGAATTACTTCAACATTTTGGATAAAATCG

350 360 370 380 390 400 410
TTCAAAGGTTCTTGATGACCACCACAATCCTCGCTTAATCAAAGATCTTCTGCAAGACCTAAGCTCTA

420 430 440 450 460 470 480
CCCTCTGCATTCTTATTAGAGGAGTAGGGAAGTCTGTATTAGTGGGAAACATCAATATTTGGATTGCCC

490 500 510 520 530 540 550
GATTAGAACTATTCTCGCCTGGCAACAACAGCTACAGGATCTTCAGATGACTAAGCAAGTGAACAATG

560 570 580 590 600 610 620
GCCTCACCCCTCAGTGACCTTCCTCTGCACATGCTGAACAACATCCTATACCGGTTCTCAGACGGATGGG

630 640 650 660 670 680 690
ACATCATCACCTTAGGCCAGGTGACCCCCACGTTGTATATGCTTAGTGAAGACAGACAGCTGTGGAAGA

700 710 720 730 740 750
AGCTTTGTCAGTACCATTTTGTCTGAAAAGCAGTTTTGTAGACATTTGATCCTTTTCAGAAAAAGGTCATA

760 770 780 790 800 810 820
TTGAATGGAAGTTGATGTACTTTGCACTTCAGAAACATTACCCAGCGAAGGAGCAGTACGGAGACACAC

830 840 850 860 870 880 890
TGCATTTCTGTTCGGCACTGCAGCATCTCTTTTGAAGGACTCAGGACAQCCCTGCACGGCGGCCGACC

900 910 920 930 940 950 960
CTGACAGCTGCTTCACGCCTGTGTCTCCGCAGCACTTCATCGACCTCTTCAAGTTTTAAGGGCTGCCCC

970 980 990 1000 1010 1020 1030
TGCCATCCCTATTGGAGATTGTGAATCCTGCTGTCTGTGCAGGGCTCATAGTGAGTGTCTGTGAGGTG

1040 1050 1060 1070 1080 1090 1100
GGTGGAGACTCCTCGGAAGCCCCGTCTCCAGAAAGCCTGGGAAGAACTGCCCTTCTGCAAAGGGGGGA

1110 1120 1130 1140 1150 1160 1170
CTGCATGGTTGCATTTTCATCACTGAAAGTCAGAGGCCAAGGAATCATTTCTACTTCTTTAAAAACTC

1180 1190 1200 1210
CTTCTAAGCATATTAATGTGAAATTTTGGTACTCTCTC

FIG. 21B

10 20 30 40 50 60
YGSEGGSSSSISDVSSSTDHTPTKAQKNVATSESDLSMRTLSTPSPALICPPNLPGFQ

70 80 90 100 110 120
NGRGSSTSSSSITGETVAMVHSPPTRLTHPLIRLASRPQKEQASIDRLPDHSMVQIFSF

130 140 150 160 170 180
LPTNQLCRCARVCRRWYNLAWDPRLWRTIRLTGETINVDRALKVLTRRLCQDTPNVCLML

190 200 210 220 230 240
ETVTVSGCRRLTDRGLYTIAQCCPELRRELVSGCYNISNEAVFDVVS LCPNLEHLDVSGC

250 260 270 280 290 300
SKVTCISLTREASIKLSPLHGKQISIRYLDMTDCFVLEDEGLHTIAAHCTQLTHLYLRRC

310 320 330 340 350 360
VRLTDEGLRYLVIYCASIKELSVSDCRFVSDFGLREIAKLESRLRYLSIAHCGRVTDVGI

370 380 390 400 410 420
RYVAKYCSKLRYLNARGCEGITDHGVEYLAKNCTKLKSLDIGKCPLVSDTGLECLALNCF

430 440 450 460 470 480
NLKRLSLKSCESITGQGLQIVAANCFDLQTLNVQDCEVSVEALRFVKRHCKRCVIEHTNP

AFF

FIG. 22A

FIG. 22B

10	20	30	40	50	60
AAAPAPAPAPTPTPEEGPDAGWGDRIPLVQIFGLLVAADGMPFPLGRAARVCRRWQE					
70	80	90	100	110	120
AASQPALWHTVTLSSPLVGRPAKGGVKAEEKLLASLEWLMPNRFSQLQRLTLIHWKSQVH					
130	140	150	160	170	180
PVLKLVGECCPRLTFLKLSGCHGVTADALVMLAKACCQLHSLDLQHSMVESTAVVSFLEE					
190	200	210	220	230	240
AGSRMRKLWLTYSQTTAILGALLGCCPQLQVLEVSTGINRNSIPLQLPVEALQKGCPO					
250	260	270	280		
LQVLRLLNLMWLPKPPGRGVAPGPGFPSLEELCLASSTCNFVS					

FIG. 23A

10 20 30 40 50 60
TGCGGCGCGCCCGCACCCGACCCGGCACCCACGCCCAGCCCGAGGAAGGGCCCGACGCGGGCTGGGG

70 80 90 100 110 120 130
AGACCGCATTCCTTGGAAATCCTGGTGCAGATTTTCGGGTTGTTGGTGGCGGCGGACGGCCCCATGCC

140 150 160 170 180 190 200
CTTCCTGGGCAGGGCTGCGCGCGTGTGCCGCCGCTGGCAGGAGGCCGCTTCCCAACCCGCGCTCTGGCA

210 220 230 240 250 260 270
CACCGTGACCCTGTCGTCCCCGCTGGTCCGCCGGCCTGCCAAGGGCGGGGTCAAGGCGGAGAAGAAGCT

280 290 300 310 320 330 340
CCTTGCTTCCTTGGAGTGGCTTATGCCCAATCGGTTTTACAGCTCCAGAGGCTGACCCTCATCCACTG

350 360 370 380 390 400 410
GAAGTCTCAGGTACACCCCGTGTGAAGCTGGTAGGTGAGTGCTGTCTCGGCTCACTTTCTCAAGCT

420 430 440 450 460 470 480
CTCCGGCTGCCACGGTGTGACTGCTGACGCTCTGGTCATGCTAGCCAAAGCCTGCTGCCAGCTCCATAG

490 500 510 520 530 540 550
CCTGGACCTACAGCACTCCATGGTGGAGTCCACAGCTGTGGTGAGCTTCTTGGAGGAGGCAGGGTCCCG

560 570 580 590 600 610 620
AATGCGCAAGTTGTGGCTGACCTACAGCTCCAGACGACAGCCATCCTGGGCGCATTGTGGGCGAGCTG

630 640 650 660 670 680 690
CTGCCCCCAGCTCCAGGTCTTGGAGGTGAGCACCGGCATCAACCGTAATAGCATTCCCCTTCAGCTGCC

700 710 720 730 740 750
TGTCGAGGCTCTGCAGAAAGGCTGCCCTCAGCTCCAGGTGCTGCGGCTGTTGAACCTGATGTGGCTGCC

760 770 780 790 800 810 820
CAAGCCTCCGGGACGAGGGGTGGCTCCCGGACCAGGCTTCCCTAGCCTAGAGGAGCTCTGCCTGGCGAG

830 840 850
CTCAACCTGCAACTTTGTGAGC

FIG. 23B

10	20	30	40	50	60
QHCSQKDTAELLRGLSLWNHAEERQKFFKYSVDEKSDKEAEVSEHSTGITHLPPEVMLSI					
70	80	90	100	110	120
FSYLN PQELCRCSQVSMKWSQLTKTGSLWKHLYPVHWARGDWYSGPATELDTPEPDDEWVK					
130	140	150	160	170	180
NRKDESRAFHEWDEDADIDEESESAEESIAISIAQMEKRLHGLIHNVL PYVGT SVKTLV					
190	200	210	220	230	240
LAYSSAVSSKMVRQILELCPNLEHLDLTQTDISDSAFDSWSWLGCCQSLRHLDLSGCEKI					
250	260	270	280	290	300
TDVALEKISRALGILTSHQSGFLKTSTSKITSTAWKNKDITMQSTKQYACLHDLTNKGIG					
310	320	330	340	350	360
EEIDNEHPWTKPVSSSENFTSPYVWMLDAEDLADIEDTVIEWRHRNVESLCVMETASNFSCS					
370	380	390	400	410	420
TSGCFSKDIVGLRTSVCWQQHCASPAFAYCGHSFCCTGTALRTMSSLPESSAMCRKAART					
430	440	450	460	470	480
RLPRGKDLIYFGSEKSDQETGRVLLFLSLSGCYQITDHGLRVLT LGGGLPYLEHLNLSCG					
490	500	510	520	530	540
LTITGAGLQDLVSACPSLNDEYFY YCDNINGPHADTASGCQNLQCGFRACCRSGE*PLTS					
550	560	570	580	590	
DLCLLHLAEQAFFHALYS*HISCVNHPFLSVTCFGPIXYNFRNLNYQXIVML					

FIG. 24A

10 20 30 40 50 60 70 80 90
ACAACTGCTCTCAGAAAGGATACTGCAGAACTCCTTAGAGGTCTTAGCCTATGGAATCATGCTGAAGAGCGACAGAARTTTTTTAAATATTCC
100 110 120 130 140 150 160 170 180
GTGGATGAAAAGTCAGATAAAGAAGCAGAAGTGTGAGAACTCCACAGGTATTAACCCATCTTCTCTCTGAGGTAATGCTGTCATTTTCAGCT
190 200 210 220 230 240 250 260 270 280
ATCTTAATCTCAAGAGTTATGTCGATGCAGTCAAGTAAGCATGAAATGGTCTCAGCTGACAAAAACGGGATCGCTTTGGAAACATCTTTACCC
290 300 310 320 330 340 350 360 370
TGTTCATTGGCCAGAGGTGACTGCTATAGTGGTCCCGCACTGAACCTTGATACTGAACCTGATGATGAATGGGTGAAAAATAGGAAAGATGAA
380 390 400 410 420 430 440 450 460 470
AGTCGCTCTTTTCATGAGTGGGATGAAGATGCTGACATTGATGAATCTGAAGAGTCTGCGGAGGAATCAATTGCTATCAGCATTCACAAATGG
480 490 500 510 520 530 540 550 560
AAAAAGCTTTACTCCATGGCTTAATTCATAACGTTCTACCATATGTTGGTACTTCTGTAAAAACCTTAGTATTAGCATACAGCTCTGCAGTTTC
570 580 590 600 610 620 630 640 650
CAGCAAAATGGTTAGGCAGATTTTAGAGCTTTGTCTAACCTGGAGCATCTGGATCTTACCCAGACTGACATTTCAGATTCTGCATTTGACAGT
660 670 680 690 700 710 720 730 740 750
TGGTCTTGGCTTGGTTGCTGCCAGAGTCTTGGCATCTTGATCTGTCTGGTTGTGAGAAAAATCAGAGATGTGGCCCTAGAGAAGATTTCCAGAG
760 770 780 790 800 810 820 830 840
CTCTTGGAACTTCTGACATCTCATCAAAGTGGCTTTTGGAAAACATCTACAAGCAAAATTAATTCAACTGCGTGGAAAAATAAGACATTACCAT
850 860 870 880 890 900 910 920 930 940
GCAGTCCACCAAGCAGTATGCCGTGTTGACAGATTAACTAACAGGGCATTGGAGAAGAAATAGATAATGAACACCCCTGGACTAAGCCTGTT
950 960 970 980 990 1000 1010 1020 1030
TCTTCTGAGAAATTCACCTTCTCTTATGCTGTGGATGTTAGATGCTGAAGATTGGCTGATATTGAAGATACTGTGGAATGGAGACATAGAAATG
1040 1050 1060 1070 1080 1090 1100 1110 1120
TTGAAAGTCTTTGTGTAATGGAACAGCATCCAACCTTTAGTTGTTCCACCTCTGGTTGTTTTAGTAAGGACATTGTTGGACTAAGGACTAGTGT
1130 1140 1150 1160 1170 1180 1190 1200 1210 1220
CTGTTGGCAGCAGCATTGTGCTTCTCCAGCCTTTGCCGTATTGTTGCTCACTCATTTTGTGTACAGGAACAGCTTTAAGAAGTATGTCATCACTC
1230 1240 1250 1260 1270 1280 1290 1300 1310
CCAGAATCTTCTGCAATGTGTAGAAAAGCAGCAAGGACTAGATTGCCCTAGGGGAAAAGACTTAATTTACTTTGGGAGTGAAAAATCTGATCAAG
1320 1330 1340 1350 1360 1370 1380 1390 1400 1410
AGACTGGACGTGTACTTCTGTTTCTCAGTTTATCTGGATGTTATCAGATCACAGACCATGGTCTCAGGGTTTTGACTCTGGGAGGAGGGCTGCC
1420 1430 1440 1450 1460 1470 1480 1490 1500
TTATTTGAGCACCTTAATCTCTCTGTTGCTTACTATAAATGGTGCAGGCTGCAGGATTGGTTTCAGCATGTCTCTCTGAATGATGAA
1510 1520 1530 1540 1550 1560 1570 1580 1590
TACTTTTACTACTGTGACAACATTAACGGTCTCATGCTGATACCGCCAGTGGATGCCAGAATTTGCAGTGTGGTTTTGAGCCTGCTGCCCT
1600 1610 1620 1630 1640 1650 1660 1670 1680 1690
CTGGCGAATGACCCCTGACTTCTGATCTTTGTCTACTTCATTTAGCTGAGCAGGCTTCTTTTCATGCATTTACTCATAGCACATTTCTTGTGT
1700 1710 1720 1730 1740 1750 1760 1770
TAACCATCCCTTTTTGAGCGTGAATGTTTTGGGCCATTNYTTACAACCTCAGAAATCTTAATTACCAGTGRATTGTAATGTTG

FIG. 24B

10 20 30 40 50 60
RVTSGCGLARGSSAMVFSNNDEGLINKKLPKELLRRIFSFLDIVTLRCRAQISKAWNILA

70 80 90 100 110 120
LDGSNWQRIDLNFQIDVEGRVVENISKRCVGFLRKLSLRGCIGVGDSSLKTFAQNCRNI

130 140 150 160 170 180
EHLNLNGCTKITDSTCYSLSRFCSKLLHLXLTSCVSITNSSLKGISEGCRNLEYLNLWC

190 200 210 220 230 240
DQITKDGIEALVRGCRGLKALLLRGCTQLEDEALKHIQNYCHELVSLNLQSCSRITDEGV

250 260 270 280 290 300
VQICRGCHRLQALCLSGCSNLTDASLTALGLNCPRLQILEAARCSHLTDAGFTLLARNCH

310 320 330 340 350 360
ELEKMDLEXCILITDSTLIQLSIHCPKLQALSLSHCELI XDDGILHLSNSTCGHERLRVL

370 380 390 400 410 420
ELDNCLLITDVALXHLENCRGLERLELYDCQQVTRAGIKRMRAQLPHVKVHAYFAPVTPP

430 440 450 460 470 480
TAVAGSGQRLCRCCVIL*QQLPGPKG**GILSSRRPESS*PTPPSPNLLILHWERHLQFP

490 500 510 520 530 540
NRHLRSRFKNGEDKKGFISNI*HHIVT*NMALT*LVLLLPSLMSSLTSTHLLL*YL*RLI

550
ILKTDQTGPASKYINCVQ*

FIG. 25A

10 20 30 40 50 60 70 80 90
TTTTACTGTACACAGTTGATGTATTTTGATGCTGGGCTGTCTGGTCTGTCTTGAGGATTATTAACTTTAGAGGTATCAGAGAAGCAAATGGG
100 110 120 130 140 150 160 170 180
TACTGGTGAGGCTGCTCATTAGGGAAGAGGGCAAAAGGAGCACTAGCTAGGTGAGAGCCATGTTTCAGGTCACAAATGTGATGTCAGATGTTGCT
190 200 210 220 230 240 250 260 270 280
TATAAATCCTTCTTGTCTTCGCCATTCTTAAATCTTGATAGGTGCTGTGGGAACTGTAAATGCCTTTCCCAATGGAGAATCAACAGATTG
290 300 310 320 330 340 350 360 370
GGTGATGGTGAGTCCGTCAGGAAGACTCAGGTCTTCTAGAGGAAAGATGCTCATCACCCCTTNGGCCAGGCAGCTGCTGTCAGAGAATGA
380 390 400 410 420 430 440 450 460 470
CACAGCACCTGCACAGTCGCTGTCCACTTCTGCCACTGCTGCGGTGGGTGACGGGAGCAAAGTAGGCGTGACTTTGACATGAGGGAGCTG
480 490 500 510 520 530 540 550 560
AGCCCGCTCCGCTGTATGCTGTCACGGGTAACTGCTGGCAGTCGTACAGCTCGAGGCGCTCCAGGCTCGGCAGTTCTCTAGGTGTGCCAG
570 580 590 600 610 620 630 640 650
GCCACATCAGTGATGAGGAGGAGTTGTCCAATCCAGTACCCGAGCCTCTCATGGCCACAGGTAAGTGTGCTCAGGTGCAGGATCCCATCAT
660 670 680 690 700 710 720 730 740 750
CTGKGATGAGTTCACAGTGGGACAGGCTCAGGGCTTGCAGTTTAGGACAGTGAATGGAGAGCTGGATGAGTGTGCTGTGCGTTATCAGGATGCA
760 770 780 790 800 810 820 830 840
WTCCTCAAGATCCATCTTCTCCAATTCTGCGCAATTCAGGCTAAAAGTGAACCTGCGTCAGTCAAAATGGGAGCATCGGGCAGCCTCCAAA
850 860 870 880 890 900 910 920 930 940
ATTTGCAGTCCCGGACAGTTCAAACCCAGGGCTGTAAGAGAGGCATCTGTGAGGTTGCTGCAACCCGAAAGGCAGAGAGCCTGTAGCCGGTGAC
950 960 970 980 990 1000 1010 1020 1030
AGCCCTGTCATATCTGCACCACTTCATCCGTGATACGTGAGCAGGACTGCAAGTTGAGGCTCACAAGCTCATGGCAGTAATCTGAATGTG
1040 1050 1060 1070 1080 1090 1100 1110 1120
TTTCAGAGCTTCATCTTCTAACTGTGTGTCAGCCCTCAGGAGCAGGGCTTTCAGGCTCGACAACCTCGCACCAAGTGCATGCCATCCTTC
1130 1140 1150 1160 1170 1180 1190 1200 1210 1220
GTGATCTGATCACACCAAGAGAGGTTTCAGGTACTCCAGGTTTCCGAGCCCTCACTGATCCCTTCAAGGAGCTGTTTGTAAATAGACACACAGG
1230 1240 1250 1260 1270 1280 1290 1300 1310
AGGTCAGAWCCAGATGTTTCAGCTTGGACAGAAATCTGCTAAGGCTATAACACGTGCTGTGTCAGTGATTTTGTGTCATCCATTCAGGTTCAAATG
1320 1330 1340 1350 1360 1370 1380 1390 1400 1410
TTCAATGTTTCGGCAGTTCTGTGCAAGGCTTCAAGGAGGAATCCCCAACCAATCCAGCCTCGCAAGCTGAGCTTCTCAGGAATCCAACG
1420 1430 1440 1450 1460 1470 1480 1490 1500
CATCGCTTCGAGATATTTTCAACCACTCGACCTCTACATCTATTGAAAGTTAAAAAGATCTATCTTTGCCAGTTGCTTCCATCCAGGGCTA
1510 1520 1530 1540 1550 1560 1570 1580 1590
AGATGTTCCAAGCCTTGGAAATCTGTGCACATCGGCACAAAGTTACTATATCCAAGAAGGAAAATATTCTTAACAGAAGTTCTTTGGGTAAGTT
1600 1610 1620 1630 1640 1650 1660 1670 1680
TTTGTAAATAAGGCCTTCATCATGTTTGTAGAAAACCATGGCCGAAGAGCCGAGCGAGCCACAGCCCGAAGTCACACGGC

FIG. 25B

10	20	30	40	50	60
MSPVFPMLTVLTMFYIICLRRRARTATRGEMTNTHRAIESNSQTSPLNAEVVQYAKEVVD					
70	80	90	100	110	120
FSSHYGSENSMSYTMWNLAGVPNVFPSSGDFTQTAVFRTYGTWWDQCPSASLPFKRTPPN					
130	140	150	160	170	180
FQSQDYVELTFEQQVYPTAVHVLETYHPGAVIRILACSANPYSPNPPAEVRWEILWSERP					
190	200	210	220	230	240
TKVNASQARQFKPCIKQINFPTNLIRLEVNSSLLEYYTELDAVVLHGVDKDPVLSLKTSL					
250	260	270	280	290	300
IDMNDIEDDAYAEKDGCMDSLNKKFSSAVLGEGPNNGYFDKLPYELIQLILNHLTLPLDL					
310	320	330	340	350	360
CRLAQTCCKLLSQHCCDPLQYIHLNLQPYWAKLDDTSLEFLQSRCTLVQWLNLSWTGNRGF					
370	380	390	400	410	420
ISVAGFSRFLKVCSELVRLELSCSHFLNETCLEVISEMCPNLQALNLSSCDKLPQAFN					
430	440	450	460	470	480
HIAKLCSLKRLVLYRTKVEQTALLSILNFCSELQHLSLGSCVMIEDYDVIASMIGAKCKK					
490	500	510	520	530	540
LRTLDLWRCKNITENGIAELASGCPLLEELDLGWCPTLQSSTGCFTRLAHQLPNLQKLFL					
550	560	570	580	590	600
TANRSVCDTDIDELACNCTRLQQLDILGTRMVSPASLRKLLSCKDLSLLDVSFCSQIDN					
610	620				
RAVLELNASF PKVFIKKSFTQ					

FIG. 26A

10 20 30 40 50 60 70 80 90
ATGTCACCGGTCTTTCCCATGTTAACAGTTCTGACCATGTTTTATTATATATATGCCTTCGGCGCCGAGCCAGGACAGCTACAAGAGGAGAAATGA
100 110 120 130 140 150 160 170 180
TGAACACCCATAGAGCTATAGAATCAAAACAGCCAGACTTCCCCCTCTCAATGCAGAGGTAGTCCAGTATGCCAAAGAAGTAGTGGATTTCAGTTTC
190 200 210 220 230 240 250 260 270 280
CCATTATGGAAGTGAGAATAGTATGTCTTACTATGTGGAATTTGGCTGGTGTACCAAAATGTATTCCCAAAGTTCTGGTGACTTTACTCAGACA
290 300 310 320 330 340 350 360 370
GCTGTGTTTCGAACCTTATGGGACATGGTGGGATCAGTGTCTAGTGTCTTCCCTTGCCATTCAAGAGGAGCCACCTAATTTTCAGAGCCAGGACT
380 390 400 410 420 430 440 450 460 470
ATGTGGAACCTTACTTTTGAACAACAGGTGTATCCTACAGCTGTACATGTTCTAGAAAACCTATCATCCCGGAGCAGTCATTAGAATTCGCGTTG
480 490 500 510 520 530 540 550 560
TTCTGCAAACTCCTTATTCCCCAAATCCACCAGCTGAAGTAAGATGGGAGATTCTTTGGTCAGAGAGACCTACGAAGGTGAATGCTTCCCAAAGCT
570 580 590 600 610 620 630 640 650
CGCCAGTTTAAACCTTGTATTAAACAGATAAAATTTCCCCCAAACTCTTATAGACTGGAAAGTAAATAGTTCTCTTCTGGAATATTACACTGAAT
660 670 680 690 700 710 720 730 740 750
TAGATGCAGTTGTCTACATGGTGTGAAGGACAAGCCAGTGCTTCTCTCAAGACTTCACCTTATTGACATGAATGATATAGAAGATGATGCCTA
760 770 780 790 800 810 820 830 840
TGCAGAAAAGGATGTTGTGGAATGGACAGTCTTAACAAAAAGTTTAGCAGTGCTGTCTCGGGGAAGGGCCAAATATGGGTATTTTGATAAA
850 860 870 880 890 900 910 920 930 940
CTACCTTATGAGCTTATTAGCTGATTCTGAATCATCTTACACTACCAGACCTGTGTAGATTAGCACAGACTTGCAAACTACTGAGCCAGCATT
950 960 970 980 990 1000 1010 1020 1030
GCTGTGATCCTCTGCAATACATCCACCTCAATCTGCAACCATACTGGGCAAACTAGATGACACTTCTCTGGAATTTCTACAGTCTCGCTGCAC
1040 1050 1060 1070 1080 1090 1100 1110 1120
TCTTGTCCAGTGGCTTAATTTATCTTGGACTGGCAATAGAGGCTTCATCTCTGTTCAGGATTTAGCAGGTTTCTGAAGGTTTGTGGATCCGAA
1130 1140 1150 1160 1170 1180 1190 1200 1210 1220
TTAGTACCCCTTGAATTGTCTTCCAGCCACTTTCTTAATGAAACTTGCTTAGAAGTTATTTCTGAGATGTGTCCAAATCTACAGGCCTTAAATC
1230 1240 1250 1260 1270 1280 1290 1300 1310
TCTCCTCTGTGATAAGCTACCACCTCAAGCTTTCAACCACATTGCCAAGTTATGCAGCCTTAAACGACTTGTCTCTATCGAACAAAAGTAGA
1320 1330 1340 1350 1360 1370 1380 1390 1400 1410
GCAACAGCACTGCTCAGCATTTTGAACCTTCTGTTTCAGAGCTTCAGCACCTCAGTTTAGGCAGTTGTCTCATGATTGAAGACTATGATGTGATA
1420 1430 1440 1450 1460 1470 1480 1490 1500
GCTAGCATGATAGGAGCCAAAGTGTAATAAACTCCGACCCCTGGATCTGTGGAGATGTAAGAATATTACTGAGAATGGAATAGCAGAACTGGCTT
1510 1520 1530 1540 1550 1560 1570 1580 1590
CTGGGTGTCCACTACTGGAGGAGCTTGACCTTGGCTGGTGGCCAACTCTGCAGAGCAGCACCGGGTGCTTCACCAGACTGGCACACCACTGCC
1600 1610 1620 1630 1640 1650 1660 1670 1680 1690
AACTTGCAAAAACCTTTCTTACAGCTAATAGATCTGTGTGTGACACAGACATTGATGAATTGGCATGTAATTGTACCAGGTTACAGCAGCTG
1700 1710 1720 1730 1740 1750 1760 1770 1780
GACATATTAGGAACAAGAATGGTAAGTCCGGCATCCTTAAGAAAACTCCTGGAATCTTGTAAAGATCTTTCTTTACTTGATGTGTCTTCTGTT
1790 1800 1810 1820 1830 1840 1850 1860
CGCAGATTGATAACAGAGCTGTGCTAGAACTGAATGCAAGCTTTCCAAAAGTGTTCATAAAAAAGAGCTTTACTCAGTGA

FIG. 26B

10 20 30 40 50 60
MQLVPDIEFKITYTRSPDGDGVGNSYIEDNDDDSKMADLLSYFQQQLTFQESVLKLCQPE

70 80 90 100 110 120
LESSQIHISVLPMEVLMYIFRWVSSDLLRSLEQLSLVCRGFYICARDPEIWRLACLKV

130 140 150 160 170 180
WGRSCIKLVPYTSWREMFLERPRVRFDGVYISKTTYIRQGEQSLDGFYRAWHQVEYYRYI

190 200 210 220 230 240
RFFPDGHVMMLTTPEEPQSIVPRLRTRNTRTDAILLGHYRLSQDTDNQTKVFAVITKKKE

250 260 270 280 290 300
EKPLDYKYRYFRRVPVQEADQSFHVGLQLCSSGHQRFNKLIWIHHSCHITYKSTGETAVS

310 320
AFEIDKMYTPLFFARVRSYTAFSERPL

FIG. 27A

10 20 30 40 50 60
ATGCAACTTGATACCTGATATAGAGTTCAAGATTACTTATACCCGGTCTCCAGATGGTGATGGCGTTGGA
70 80 90 100 110 120 130
AACAGCTACATTGAAGATAATGATGATGACAGCAAAATGGCAGATCTCTTGTCTACTTCCAGCAGCAA
140 150 160 170 180 190 200
CTCACATTTTCAGGAGTCTGTGCTTAACTGTGTCAGCCTGAGCTTGAGAGCAGTCAGATTCACATATCA
210 220 230 240 250 260 270
GTGCTGCCAATGGAGGTCCTGATGTACATCTTCCGATGGGTGGTGTCTAGTGACTTGGACCTCAGATCA
280 290 300 310 320 330 340
TTGGAGCAGTTGTGCGTGGTGTGCAGAGGATTCTACATCTGTGCCAGAGACCCTGAAATATGGCGTCTG
350 360 370 380 390 400 410
GCCTGCTTGAAAGTTTGGGGCAGAAGCTGTATTAAACTTGTTCGTACACGTCCTGGAGAGAGATGTTT
420 430 440 450 460 470 480
TTAGAACGGCCTCGTGTTTCGGTTTGATGGCGTGATATCAGTAAAACCACATATATTCGTCAAGGGGAA
490 500 510 520 530 540 550
CAGTCTCTTGATGGTTTCTATAGAGCCTGGCACCAAGTGAATATTACAGGTACATAAGATTCTTTCTCT
560 570 580 590 600 610 620
GATGGCCATGTGATGATGTTGACAACCCCTGAAGAGCCTCAGTCCATTGTTCCACGTTTAAGAAGTAGG
630 640 650 660 670 680 690
AATACCAGGACTGATGCAATTCTACTGGGTCACTATCGCTTGTGACAAGACACAGACAATCAGACCAA
700 710 720 730 740 750
GTATTTGCTGTAATAACTAAGAAAAAGAAGAAAACCACTTGACTATAAATACAGATATTTTCGTCGT
760 770 780 790 800 810 820
GTCCCTGTACAAGAAGCAGATCAGAGTTTTCATGTGGGGCTACAGCTATGTTCCAGTGGTCACCAGAGG
830 840 850 860 870 880 890
TTCAACAACTCATCTGGATACATCTTGTGTCATTACTTACAAATCAACTGGTGAGACTGCAGTC
900 910 920 930 940 950 960
AGTGCTTTTGAGATTGACAAGATGTACACCCCTTGTCTTCGCCAGAGTAAGGAGCTACACAGCTTTC
970 980
TCAGAAAGGCCTCTGTAG

FIG. 27B

10 20 30 40 50 60
AALDPDLENDFFVRKTGAFHANPYVLRAFEDFRKFSEQDDSVERRDIILQCREGELVLPD
70 80 90 100 110 120
LEKDDMIVRRIPAQKKEVPLSGAPDRYHPVFFPEPWTLPPEIQAKFLCVLERTCPSKEKS
130 140 150 160 170 180
NSCRILVPSYRQKKDDMLTRKIQSWKLGTTVPPISTPGPCSEADLKRWEAIREASRLRH
190 200 210 220 230 240
KKRLMVERLFQKIYGENGSKSMSDVSAEDVQNLRLRYEEMQKIKSQLKEQDQKWQDDLA
250
KWKDRRKSYTSDLQK

FIG. 28A

```
      10      20      30      40      50      60
GCAGCCCTGGATCCTGACTTAGAGAATGATGATTTCTTTGTCAGAAAGACTGGGGCTTTCCATGCAAAT
70      80      90     100     110     120     130
CCATATGTTCTCCGAGCTTTTGAAGACTTTAGAAAAGTTCTCTGAGCAAGATGATTCTGTAGAGCGAGAT
140     150     160     170     180     190     200
ATAATTTTACAGTGTAGAGAAGGTGAAC TTGTA CTTCGGATTGGAAAAAGATGATATGATTGTTCCG
210     220     230     240     250     260     270
CGAATCCCAGCACAGAAGAAAGAAGTGCCGCTGTCTGGGGCCCCAGATAGATACCACCCAGTCCCTTTT
280     290     300     310     320     330     340
CCCGAACCTTGACTCTTCTCCAGAAATTCAAGCAAAATTTCTCTGTGTACTTGAAAGGACATGCCCA
350     360     370     380     390     400     410
TCCAAAGAAAAAGTAATAGCTGTAGAATATTAGTTCCTTCATATCGGCAGAAGAAAGATGACATGCTG
420     430     440     450     460     470     480
ACACGTAAGATTTCAGTCCTGGAAACTGGGAACTACCGTGCCTCCCATCAGTTTCACNCCTGGCCCCCTGC
490     500     510     520     530     540     550
AGTGAGGCTGACTTGAAGAGATGGGAGGCCATCCGGGAGGCCAGCAGACTCAGGCACAAGAAAAGGCTG
560     570     580     590     600     610     620
ATGGTGAGAGACTCTTCAAAAAGATTTATGGTGAGAATGGGAGTAAGTCCATGAGTGATGTCAGCGCA
630     640     650     660     670     680     690
GAAGATGTTCAAAACTTGCCTCAGCTGCGTTACGAGGAGATGCAGAAAATAAAATCACAAATTAAAGAA
700     710     720     730     740     750
CAAGATCAGAAATGGCAGGATGACCTTGCAAAATGGAAAGATCGTCGAAAAAGTTACACTTCAGATCTG
760
CAGAAG
```

FIG. 28B

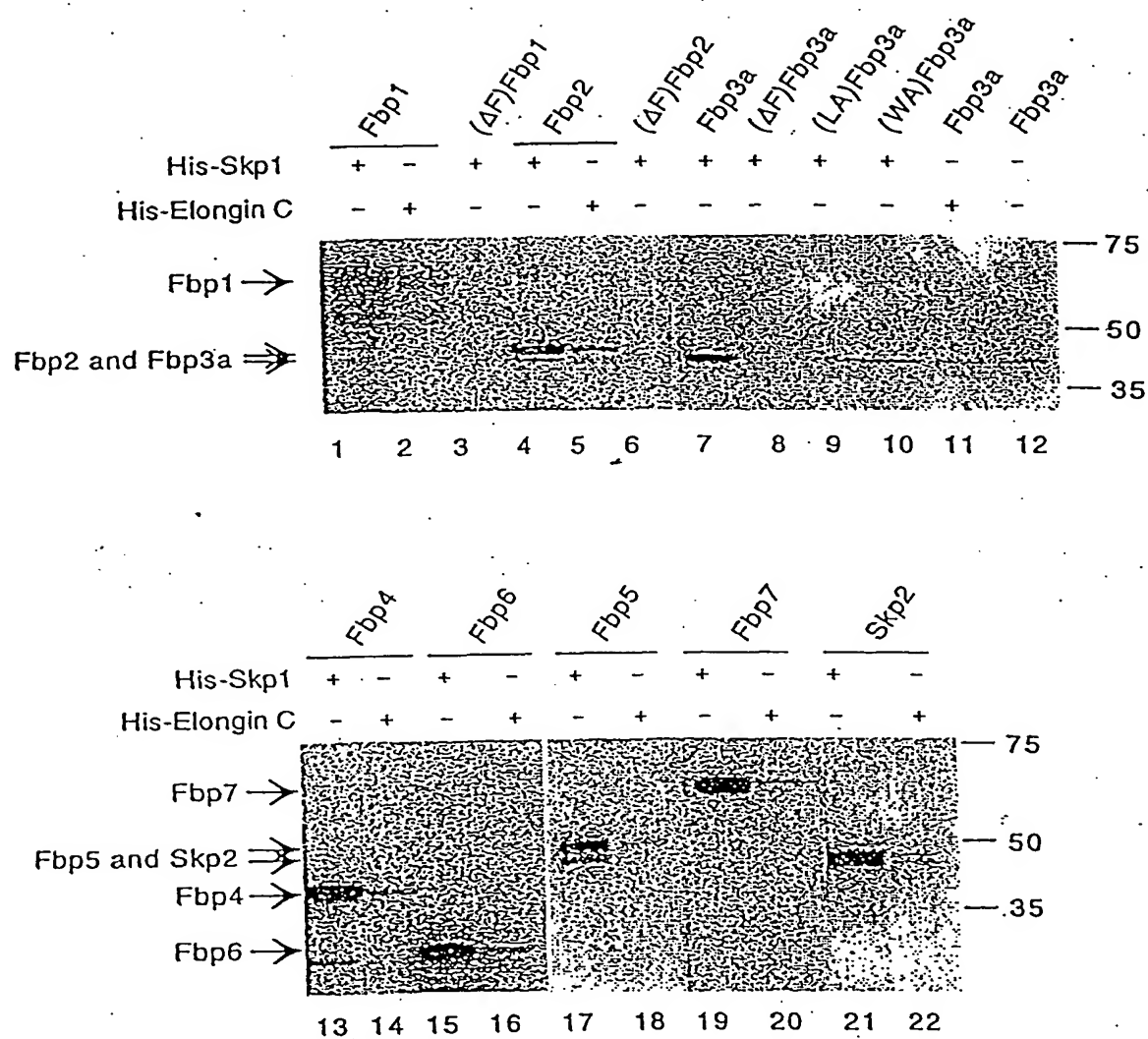


FIG. 29

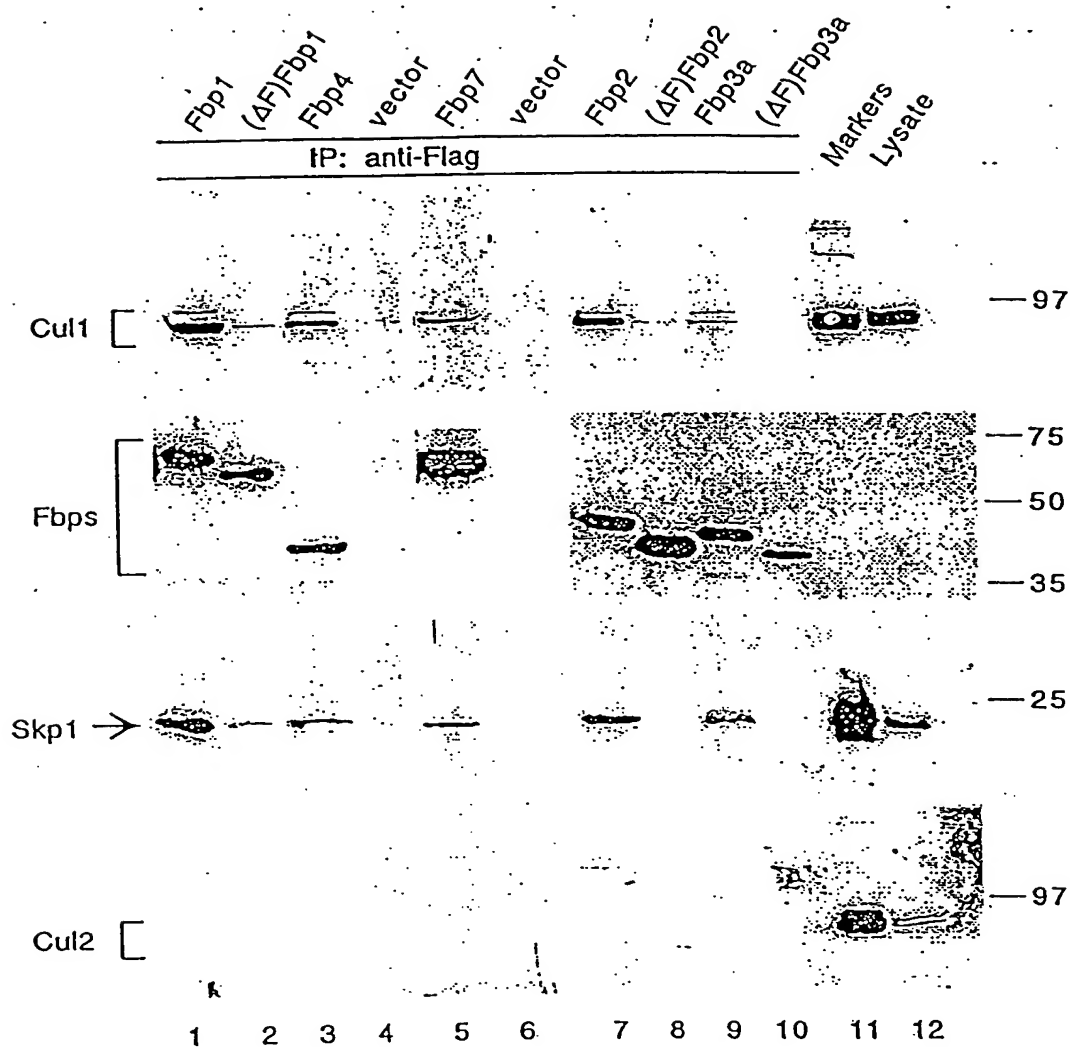


FIG. 30

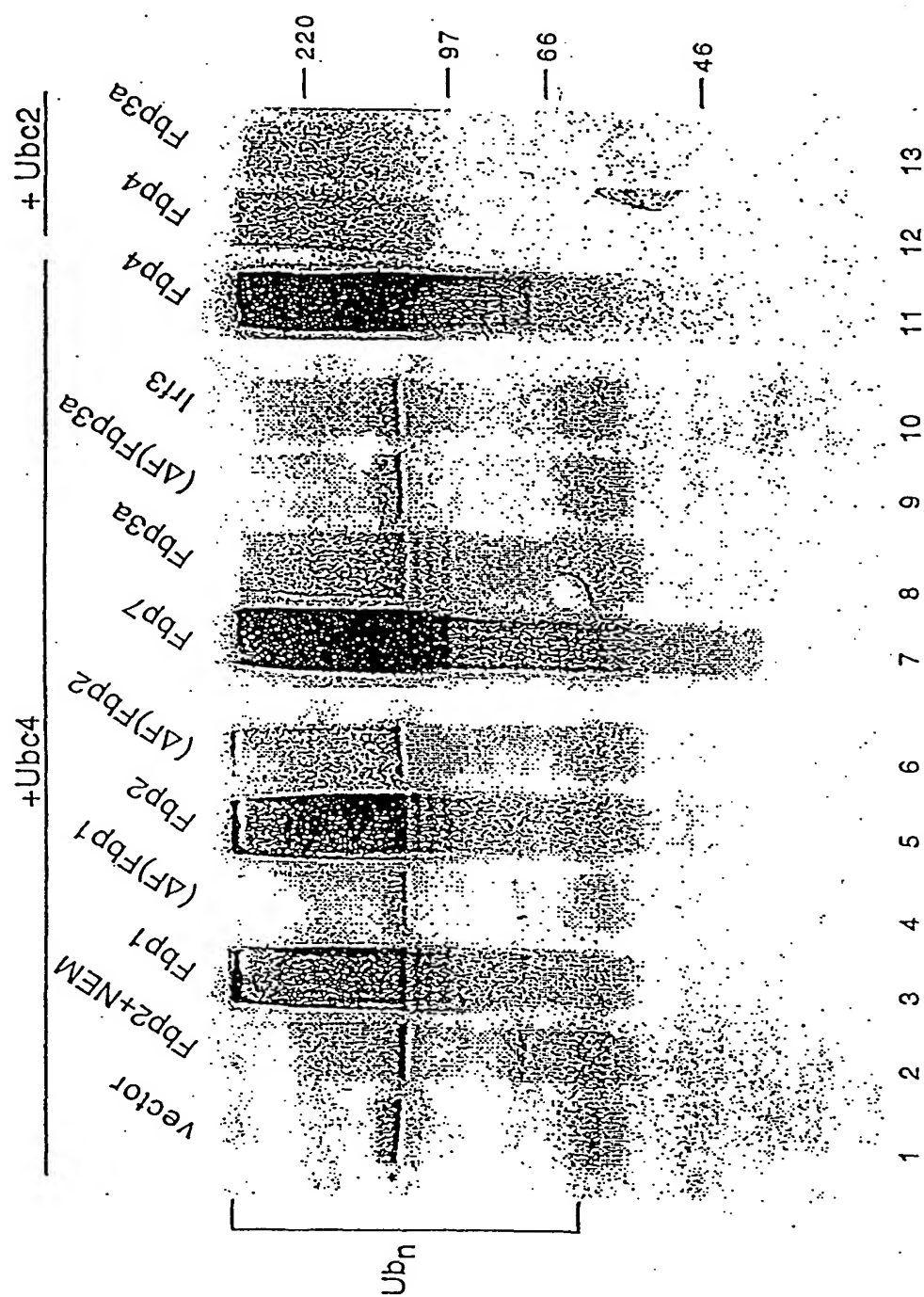


FIG. 31

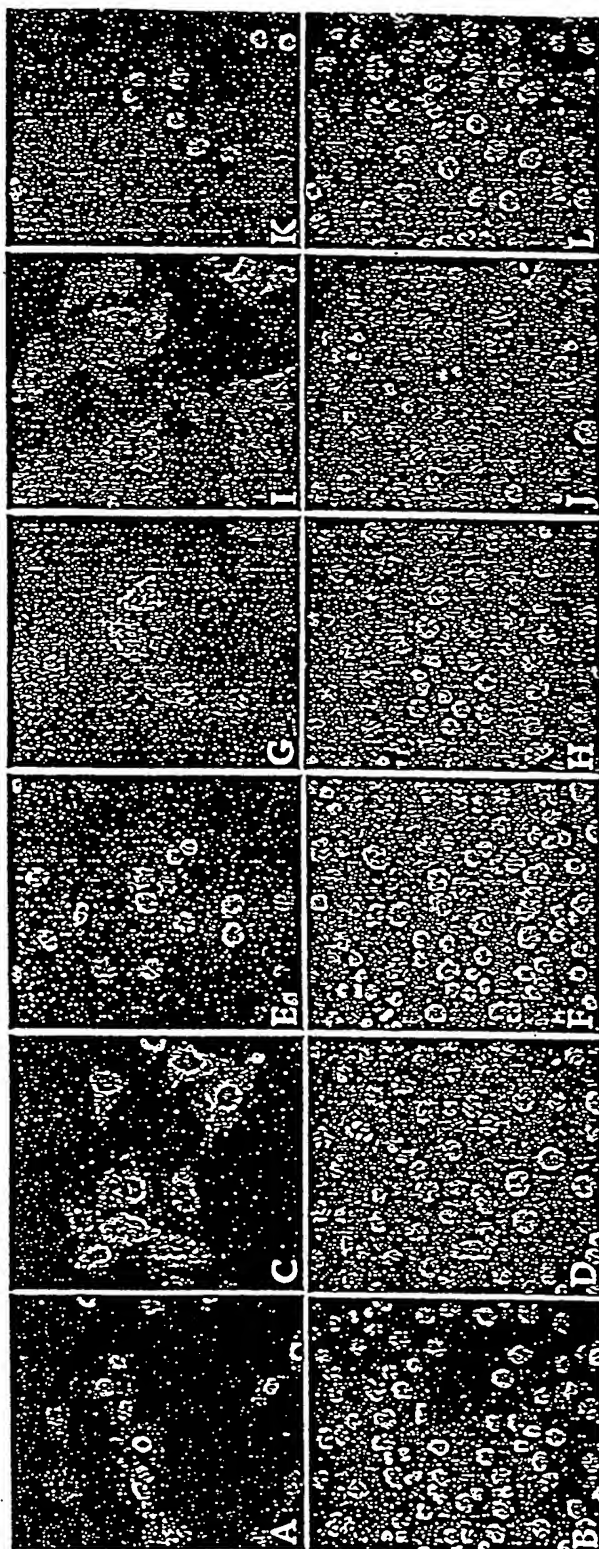


FIG. 32

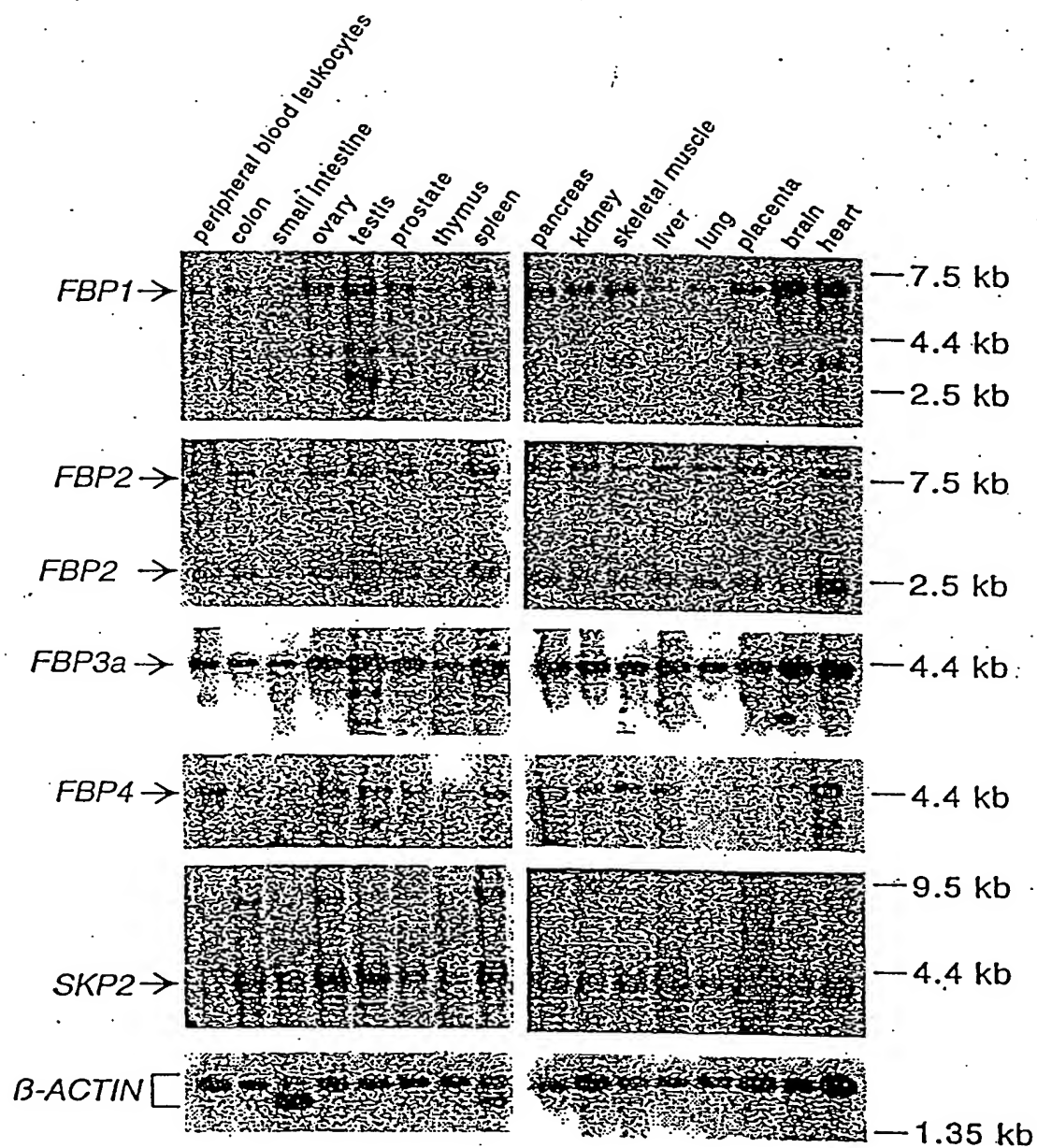


FIG. 33

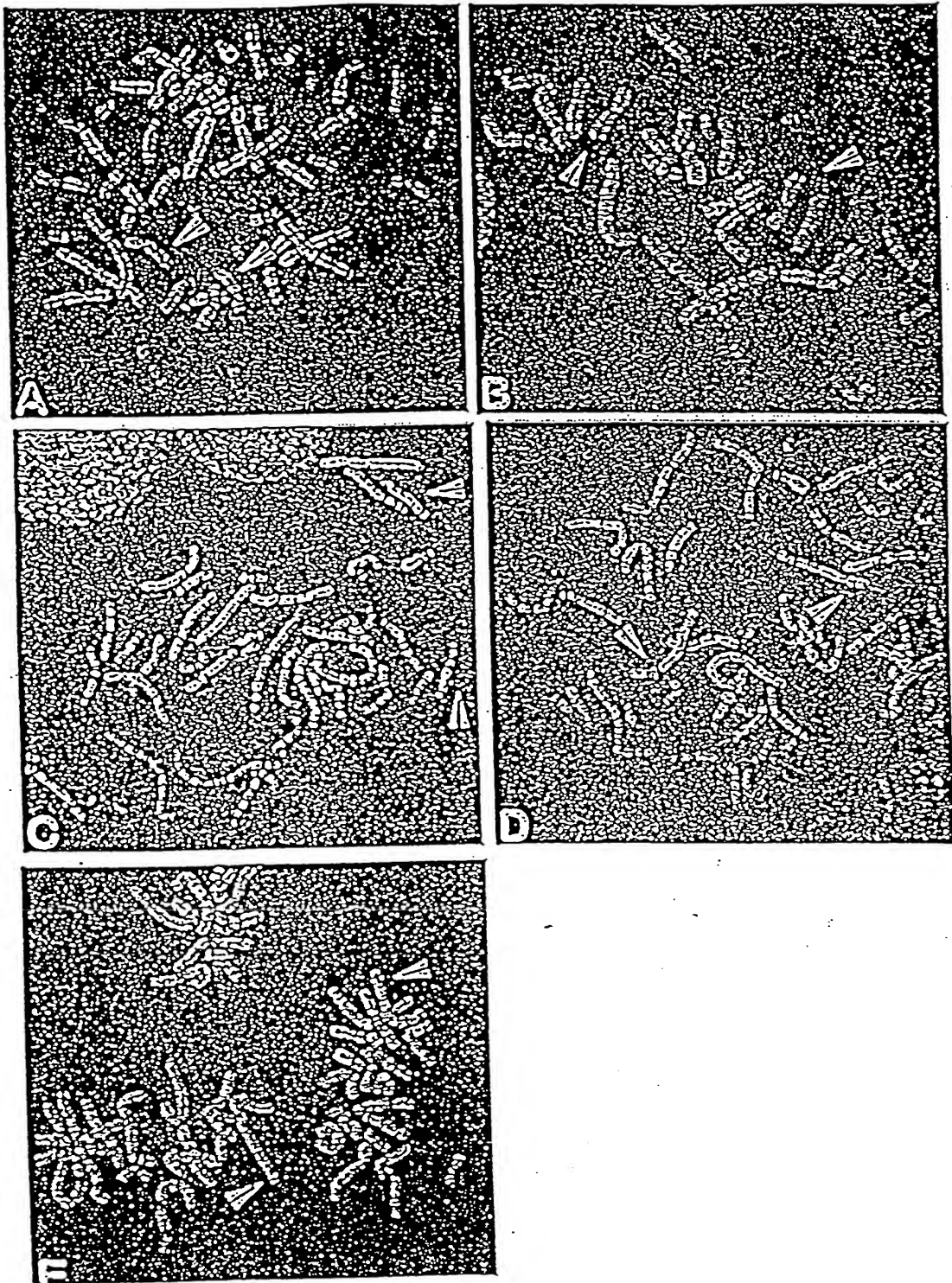


FIG. 34 A-E

5914-099

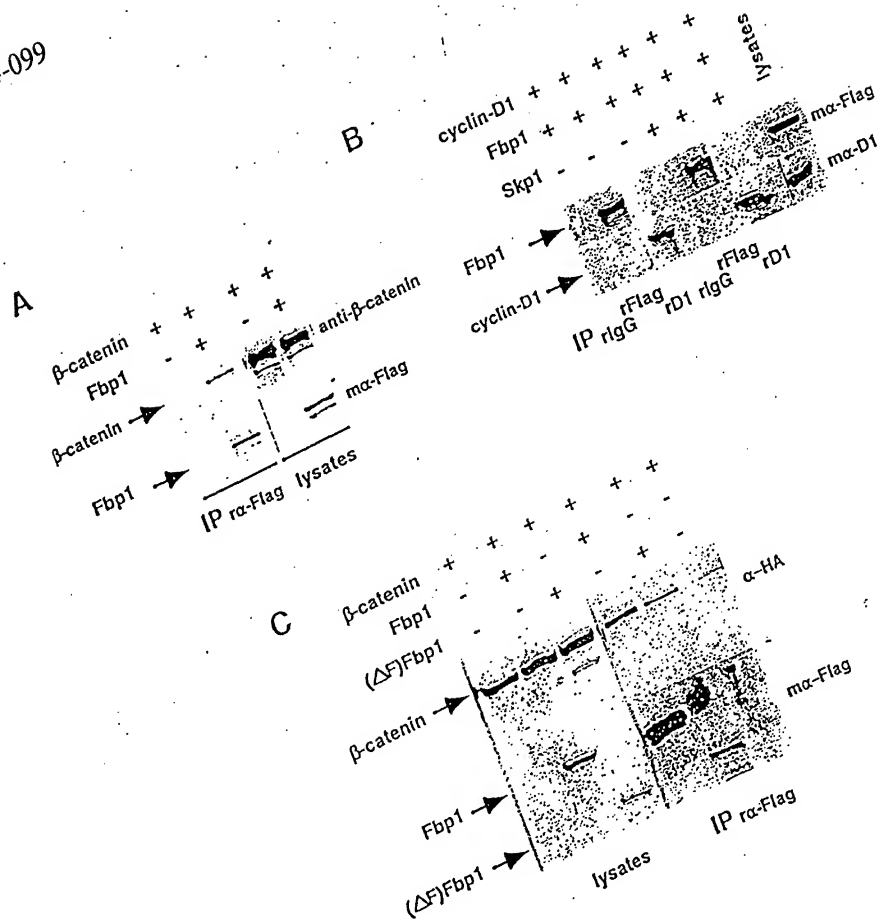


FIG. 35 A-C

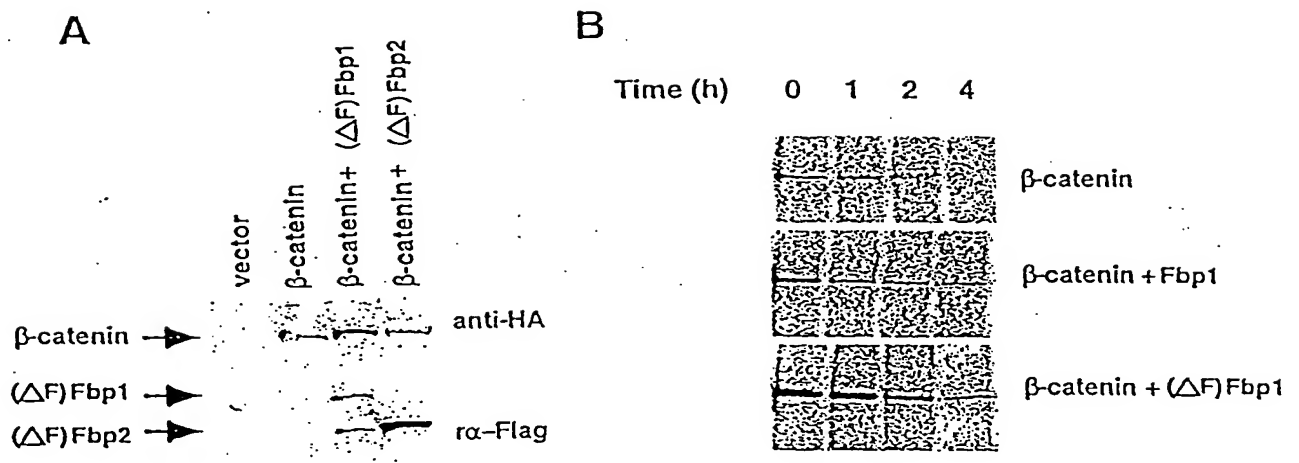


FIG. 36 A-B

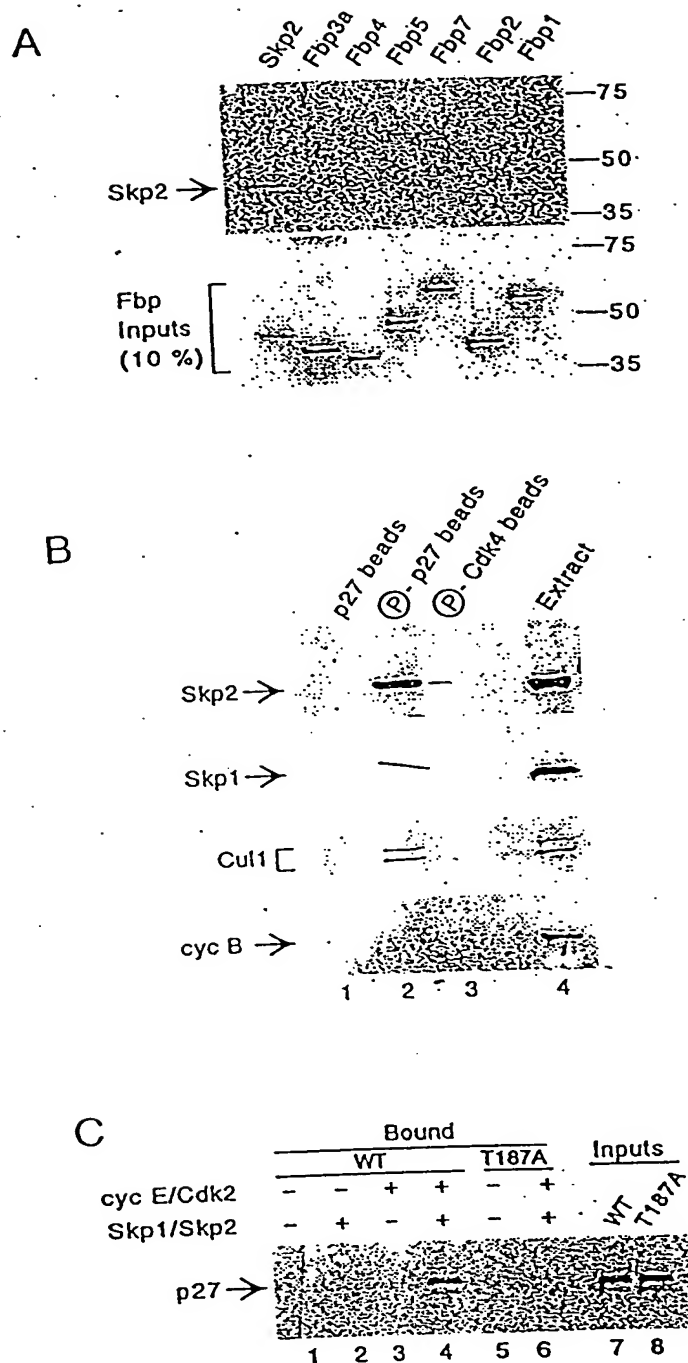


FIG. 37 A-C

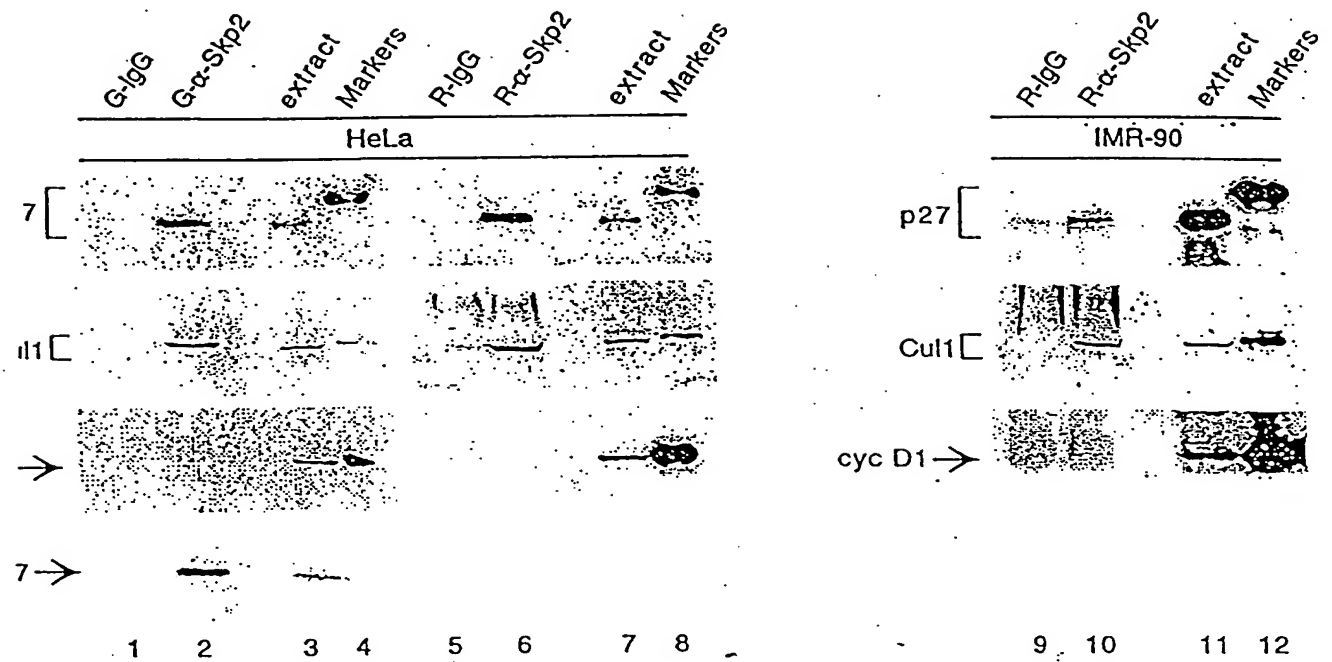


FIG. 38

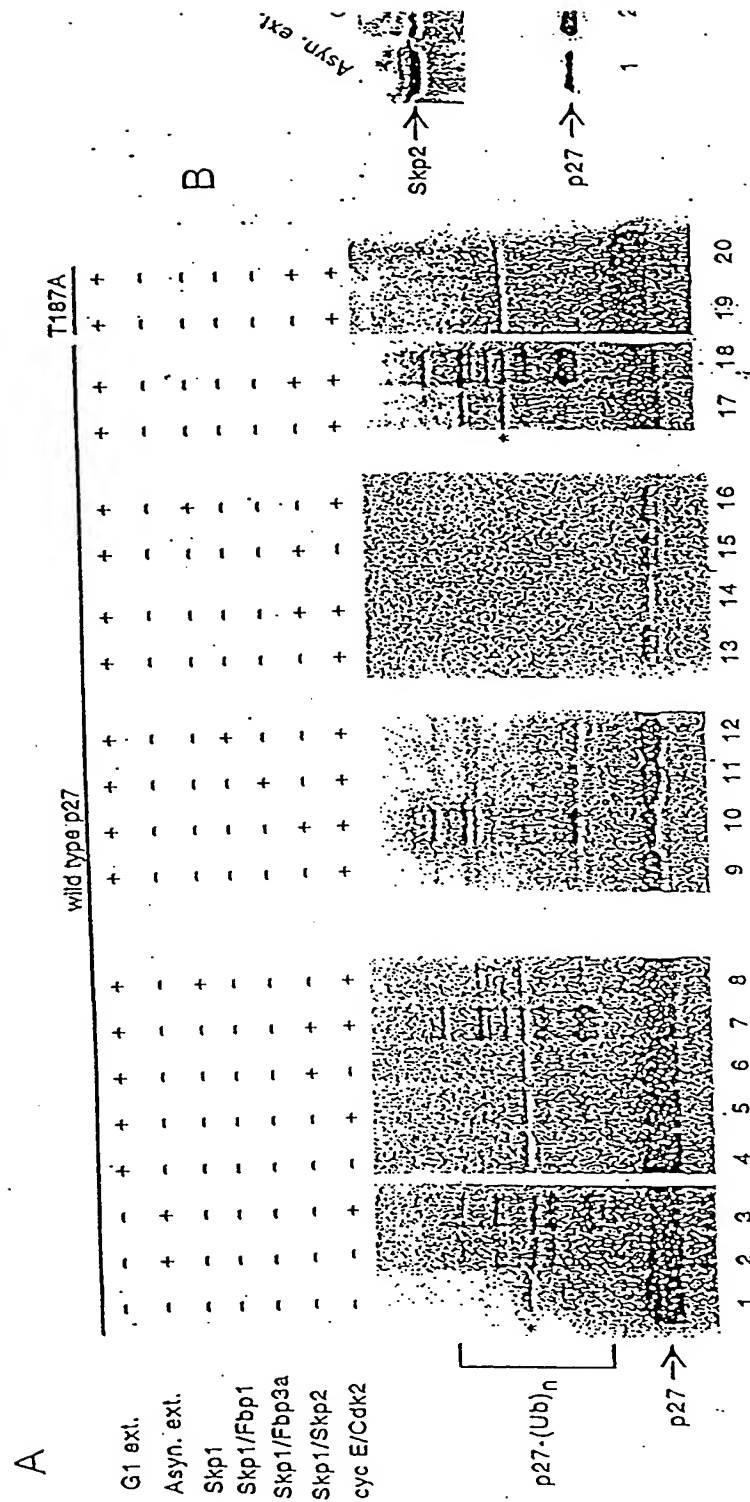


FIG. 39 A-B

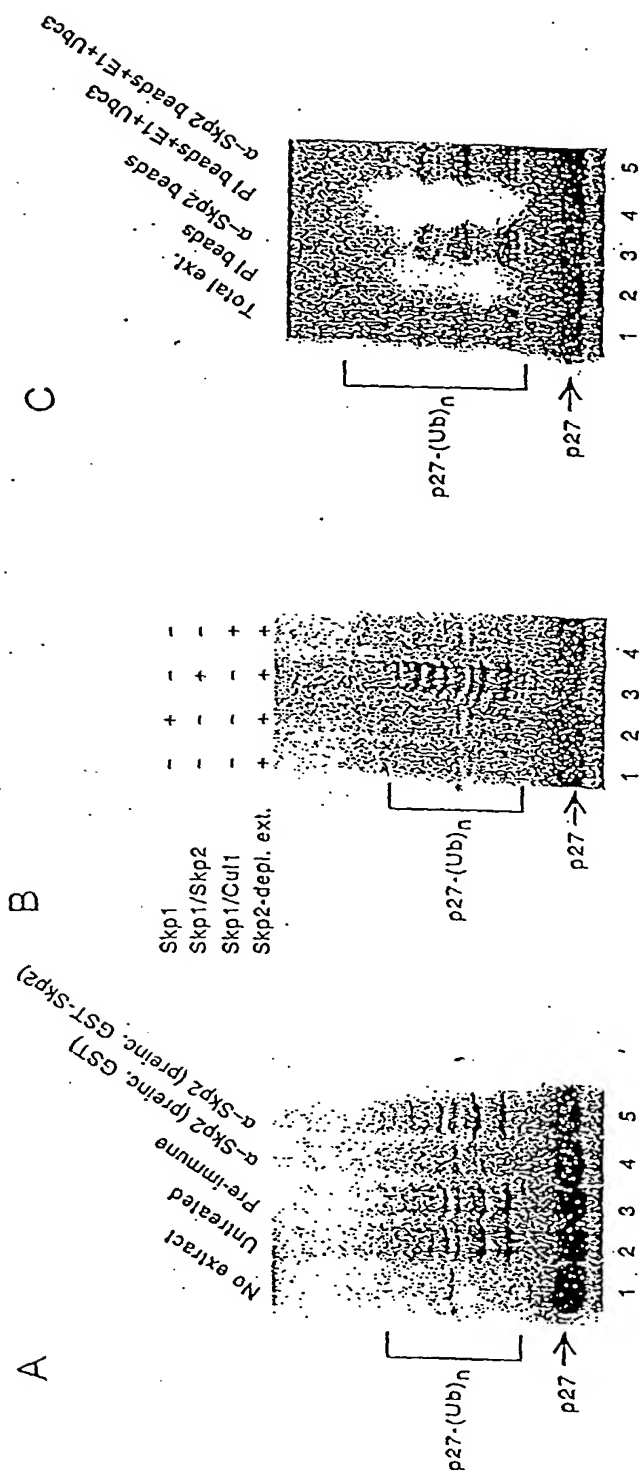
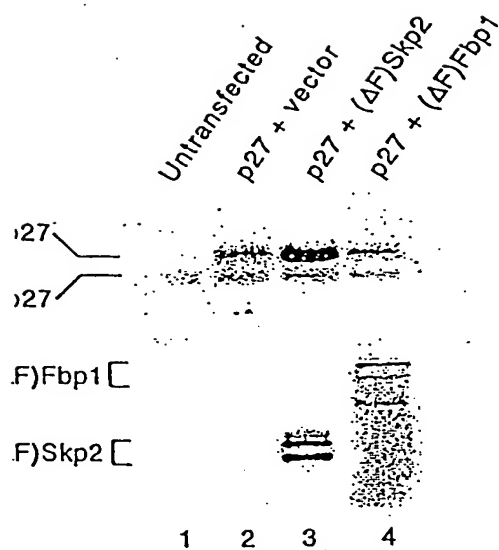


FIG. 40 A-C



B

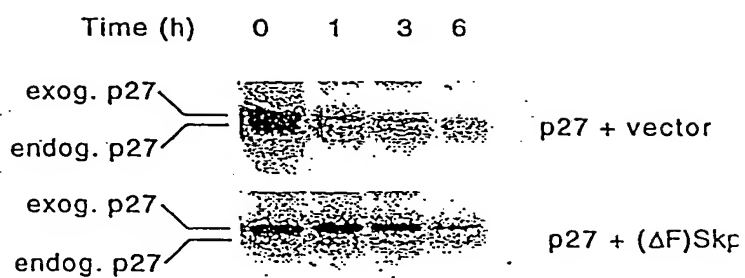


FIG. 41 A-B

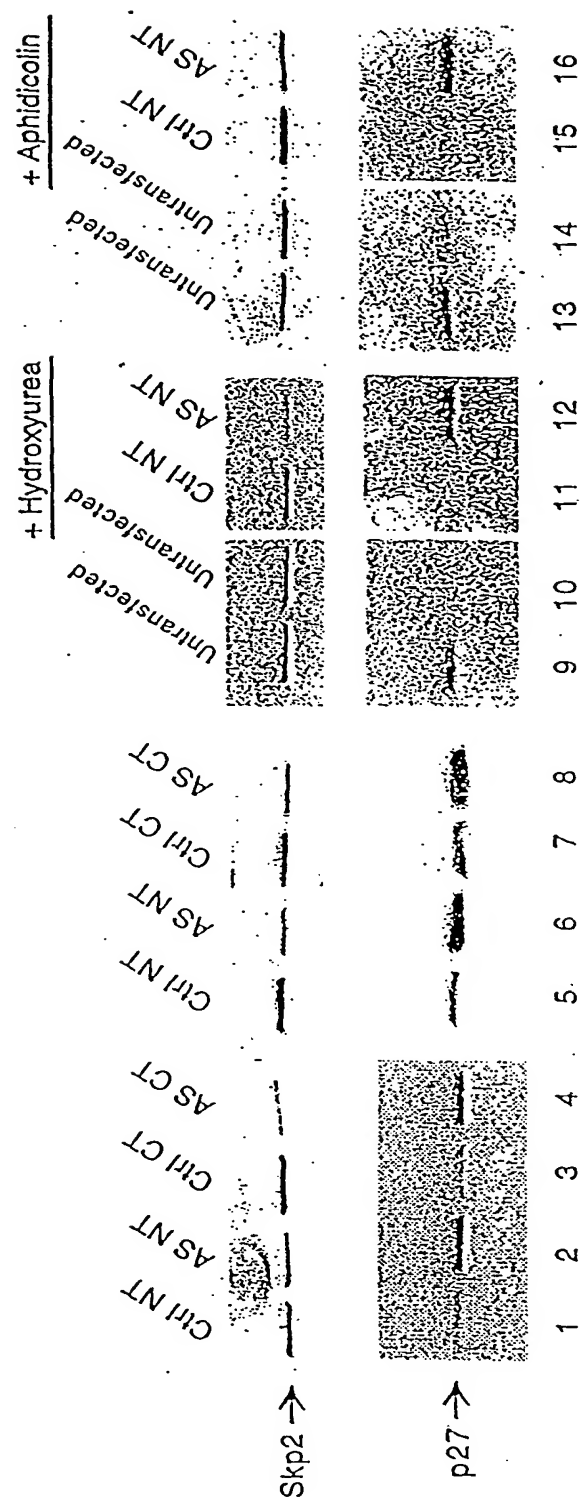


FIG. 42

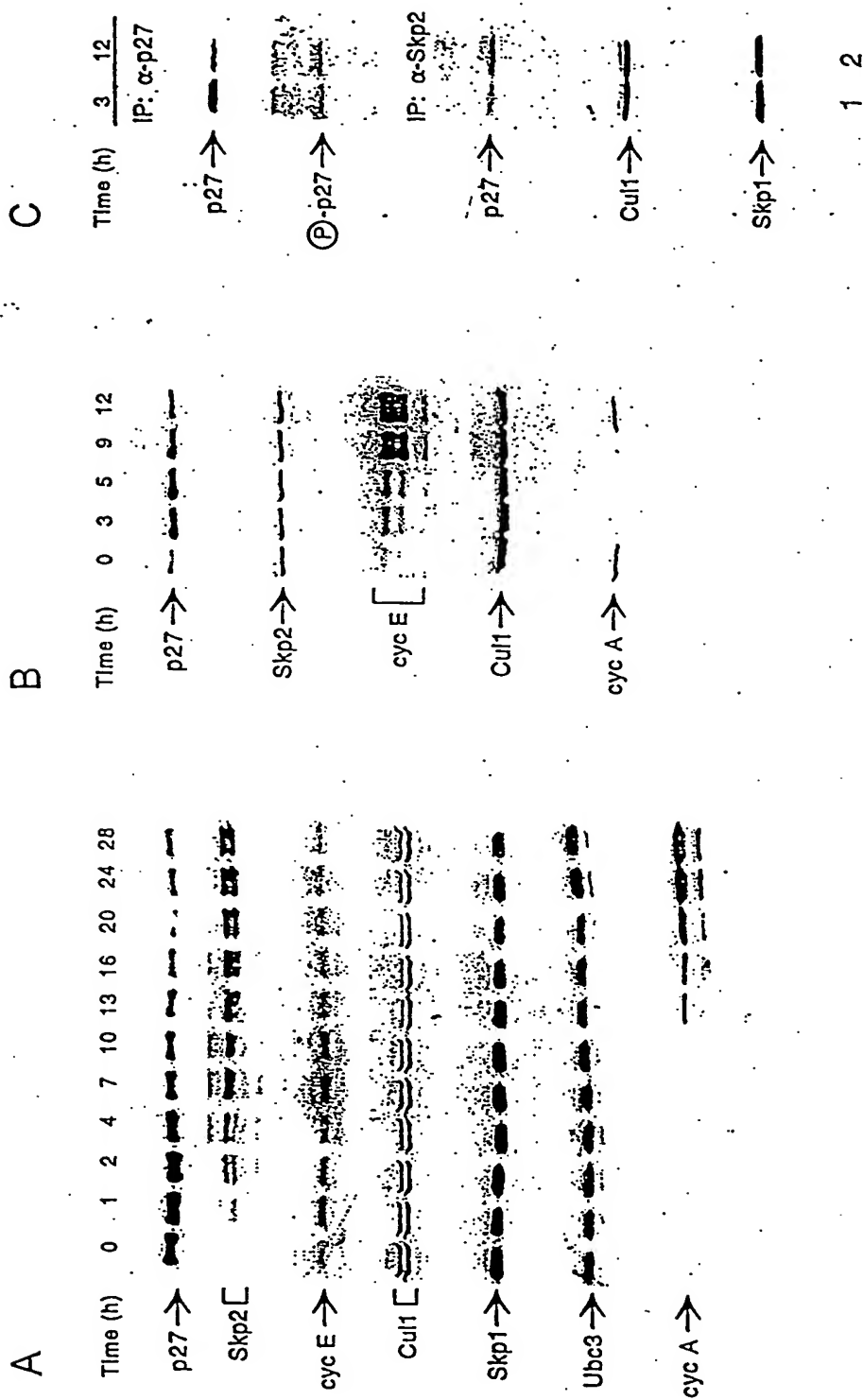
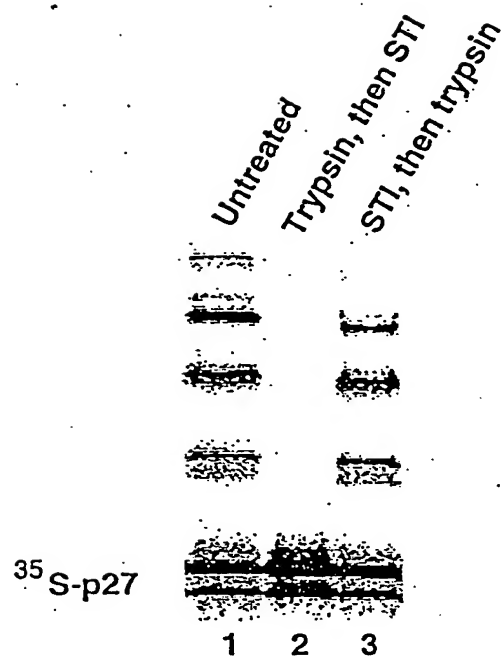
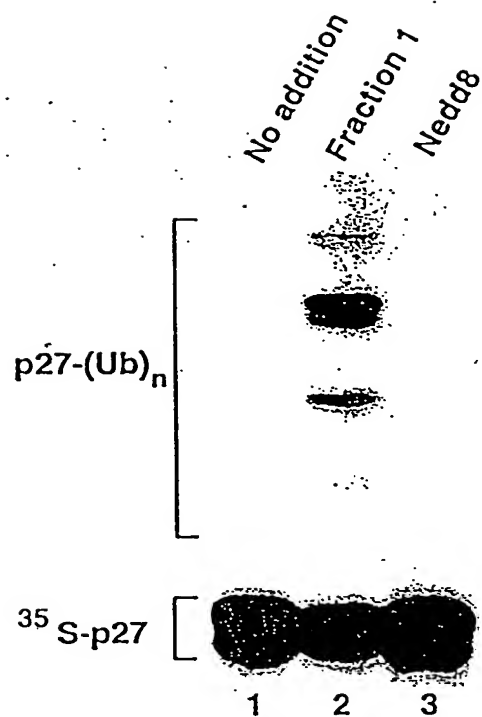
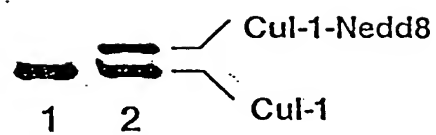
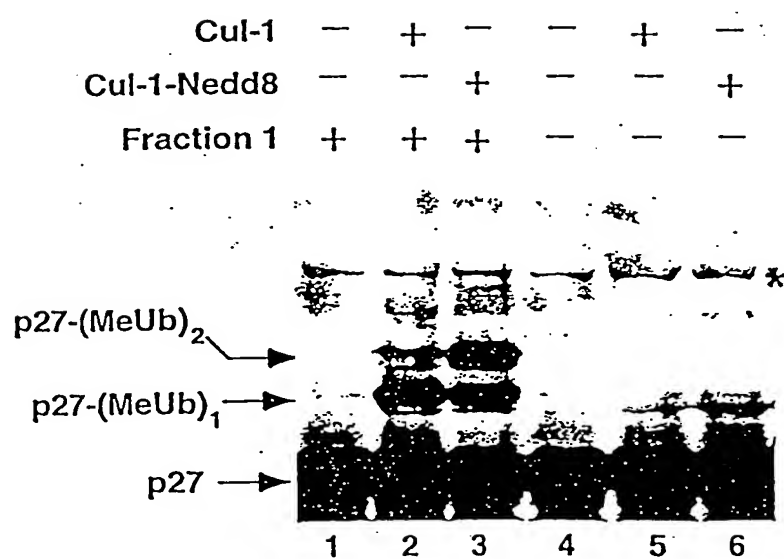
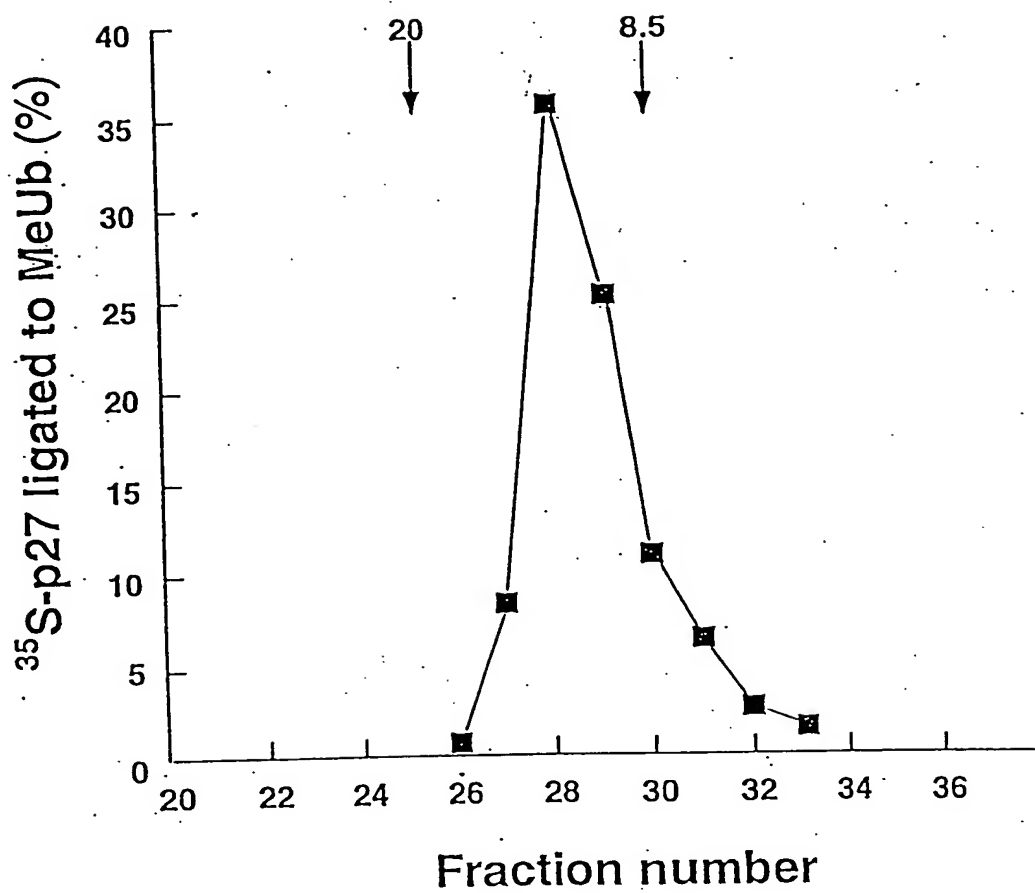


FIG. 43 A-C

**FIG. 44**

A**B****C****FIG. 45**

A.



B.

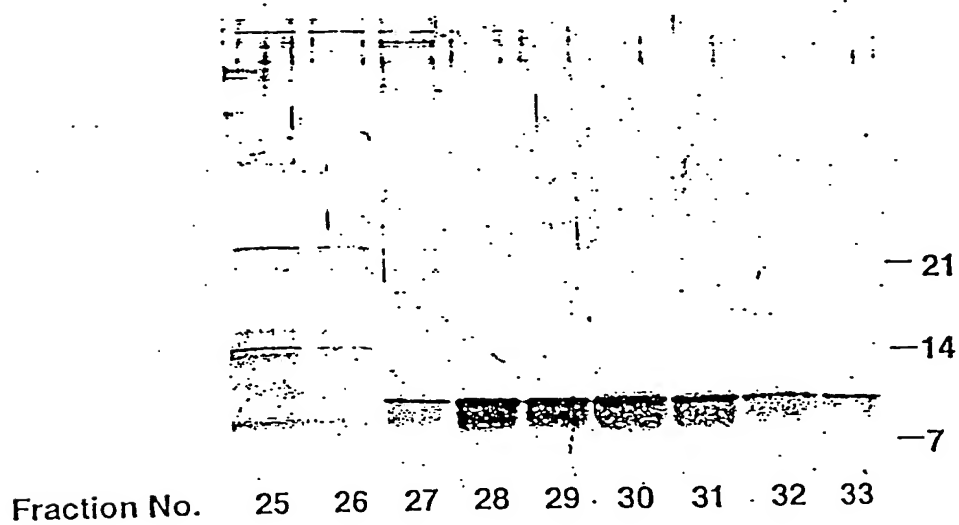


FIG. 46

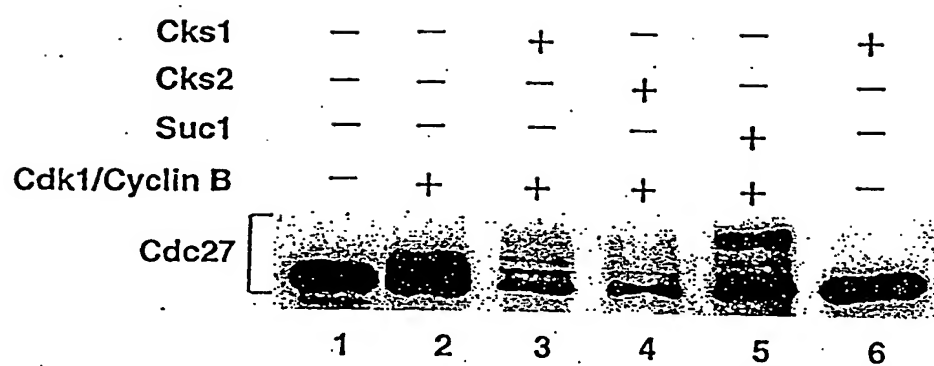


FIG. 47

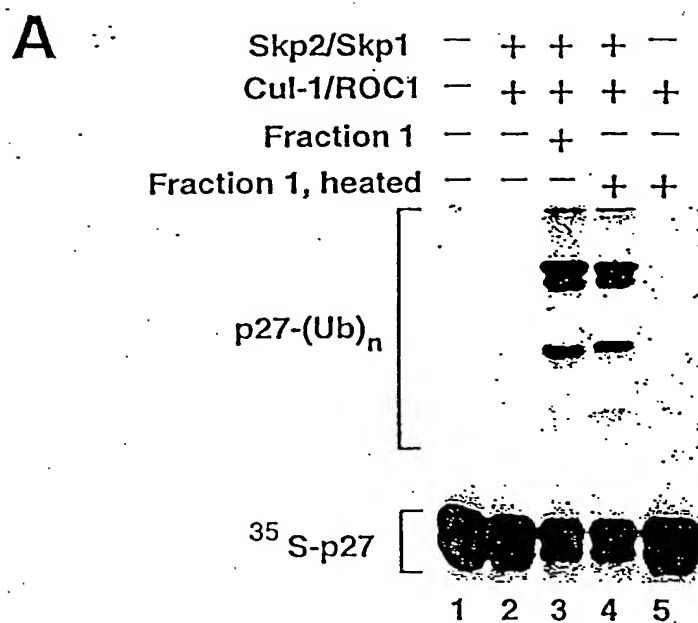
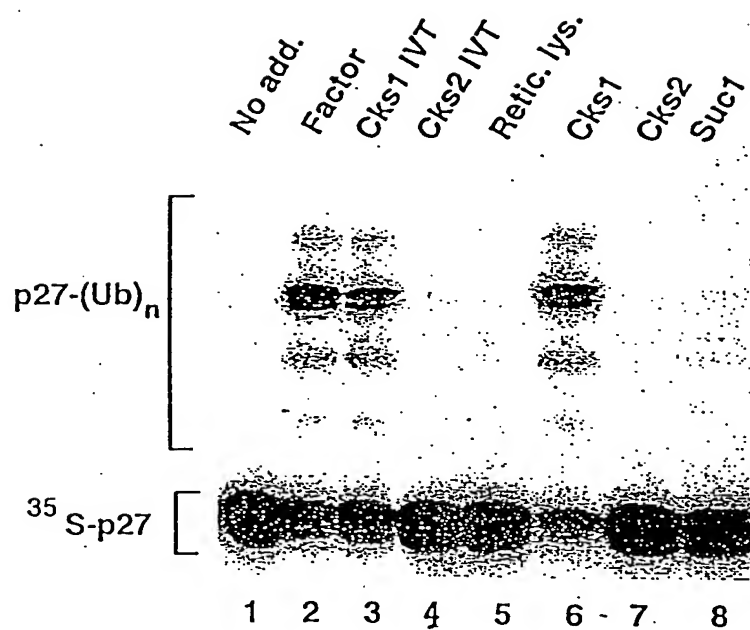


FIG. 48

B**FIG. 48**

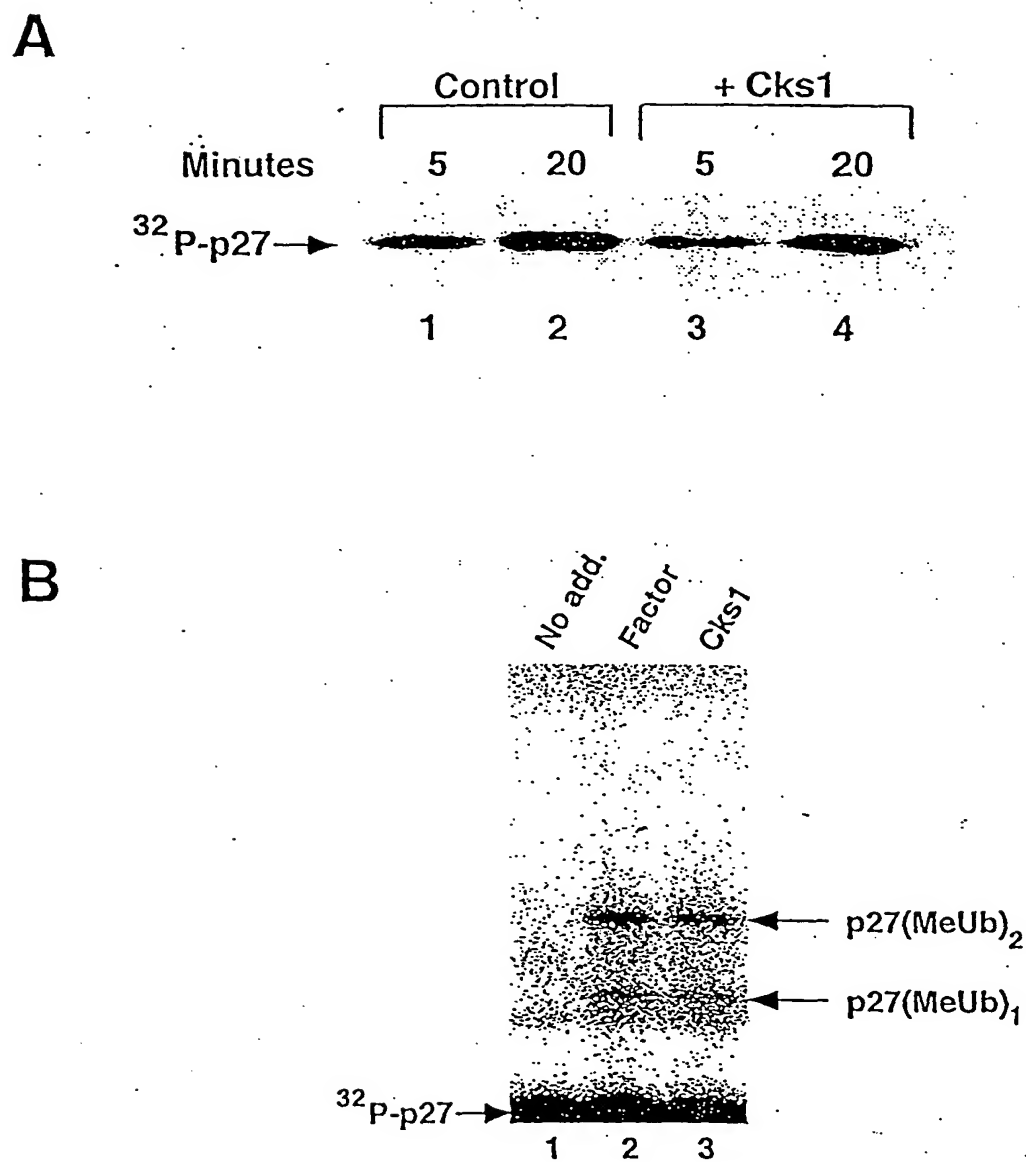
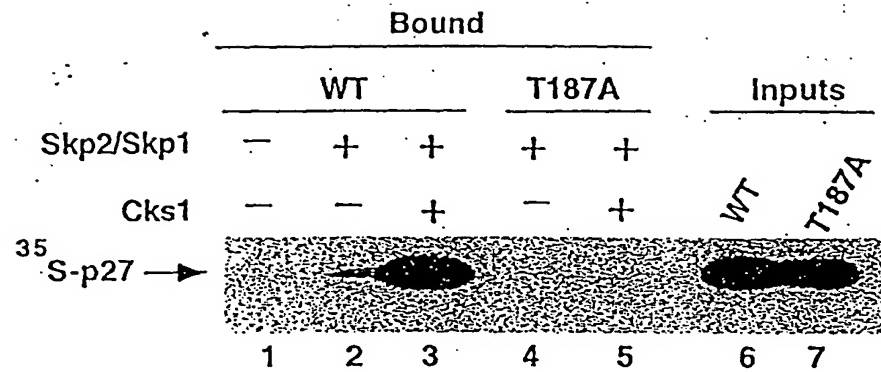
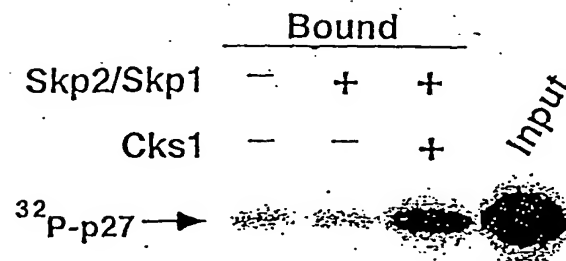
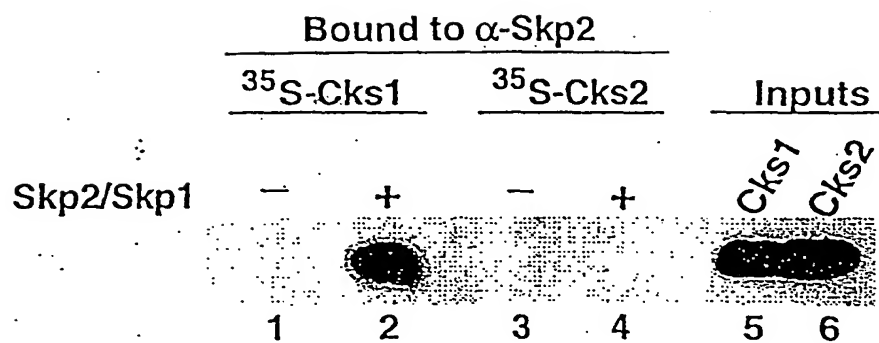
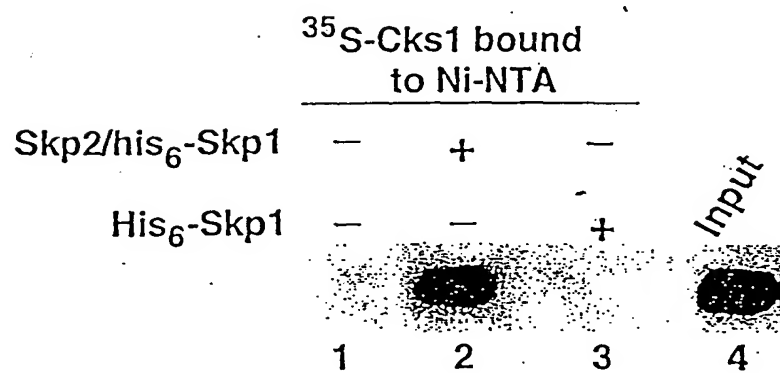
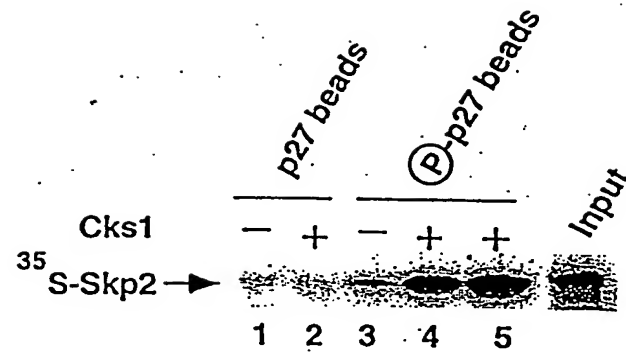
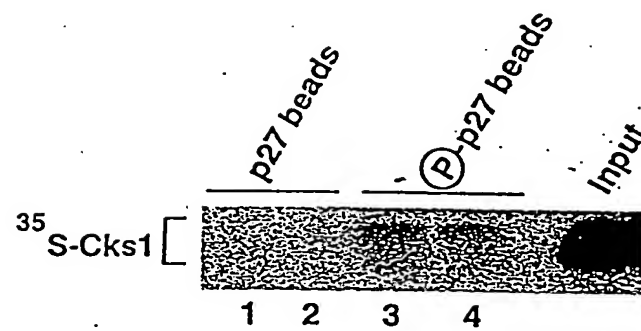


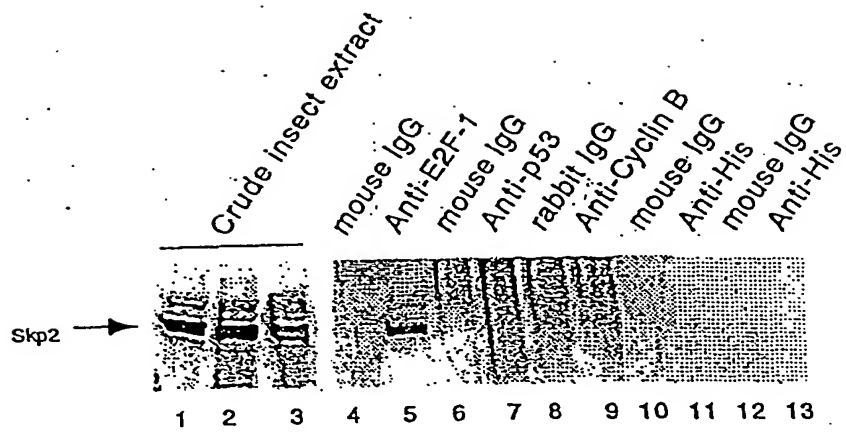
FIG. 49

C**D****FIG. 49**

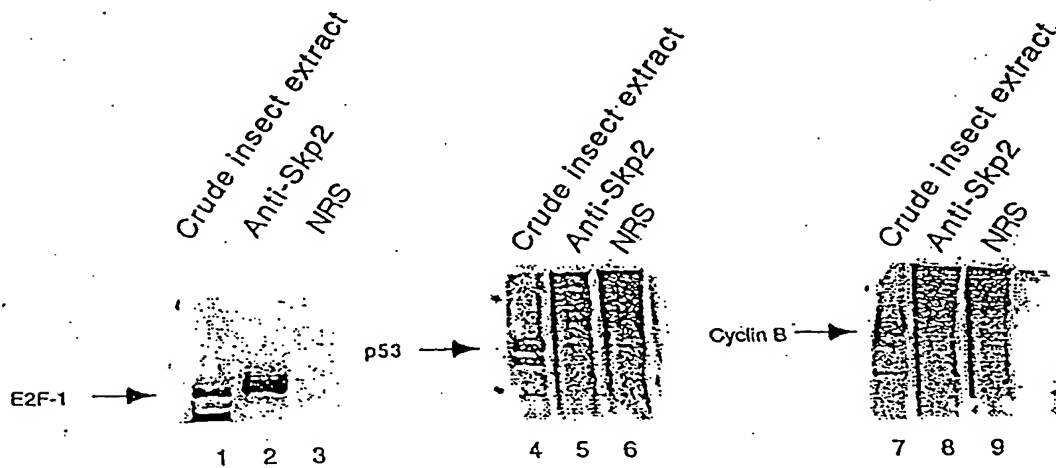
A**B****FIG. 50**

C**D****FIG. 50**

A



B



C

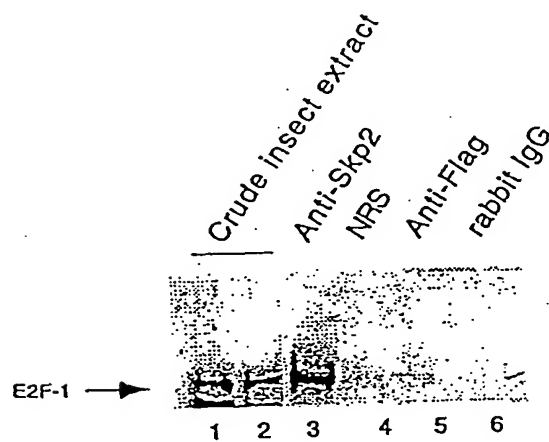


FIG. 51 A-C

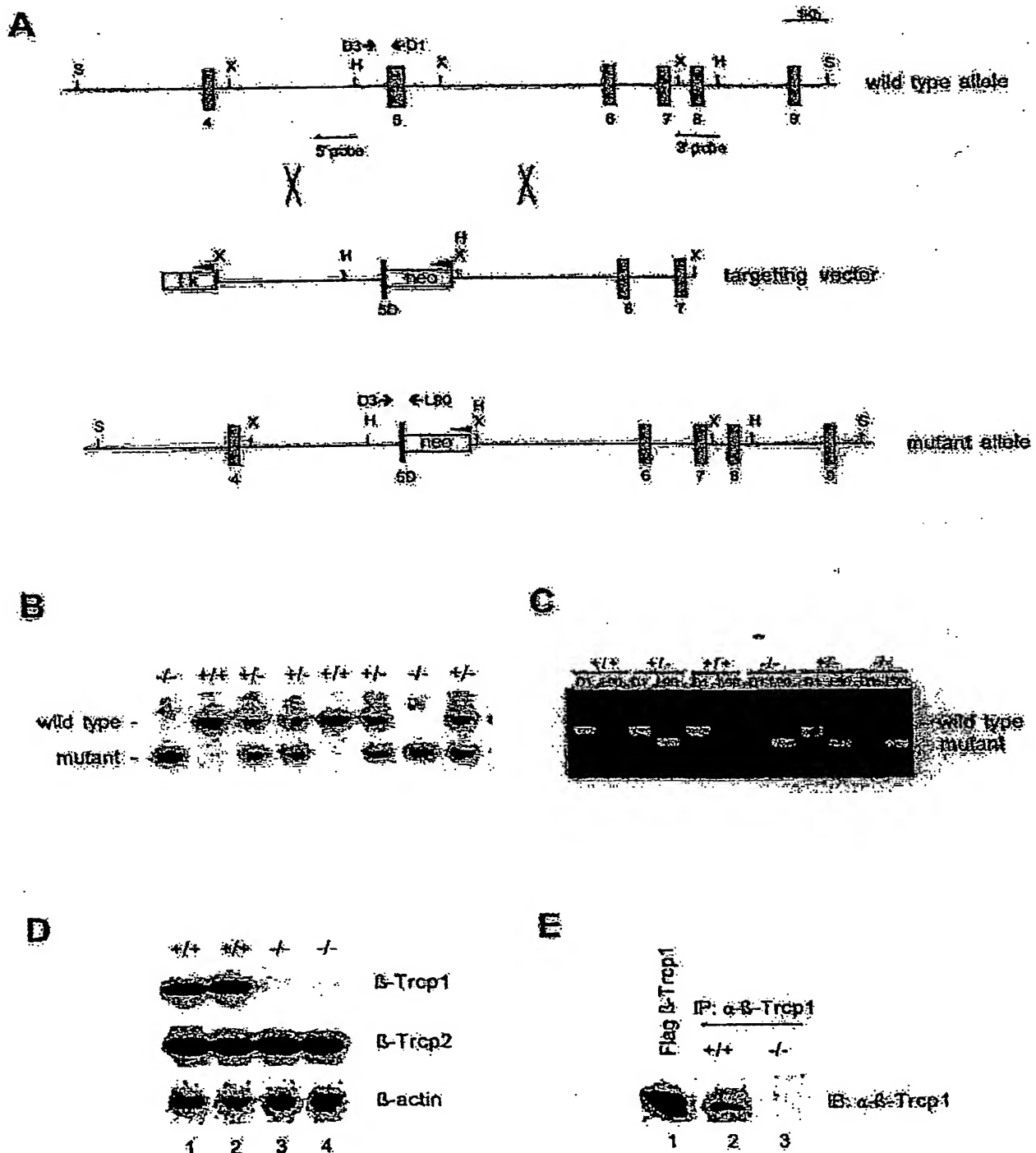


FIG. 52

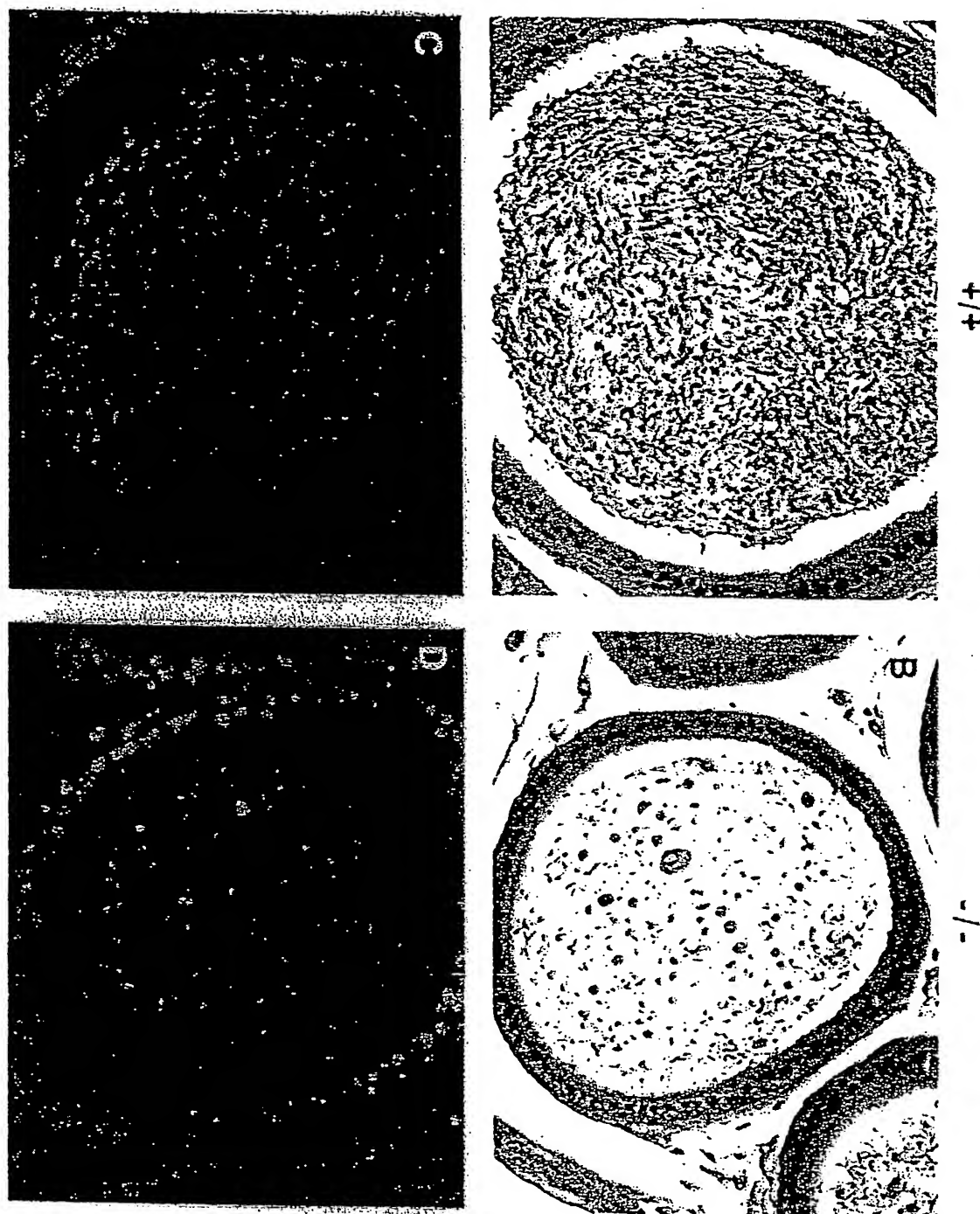


FIG. 53

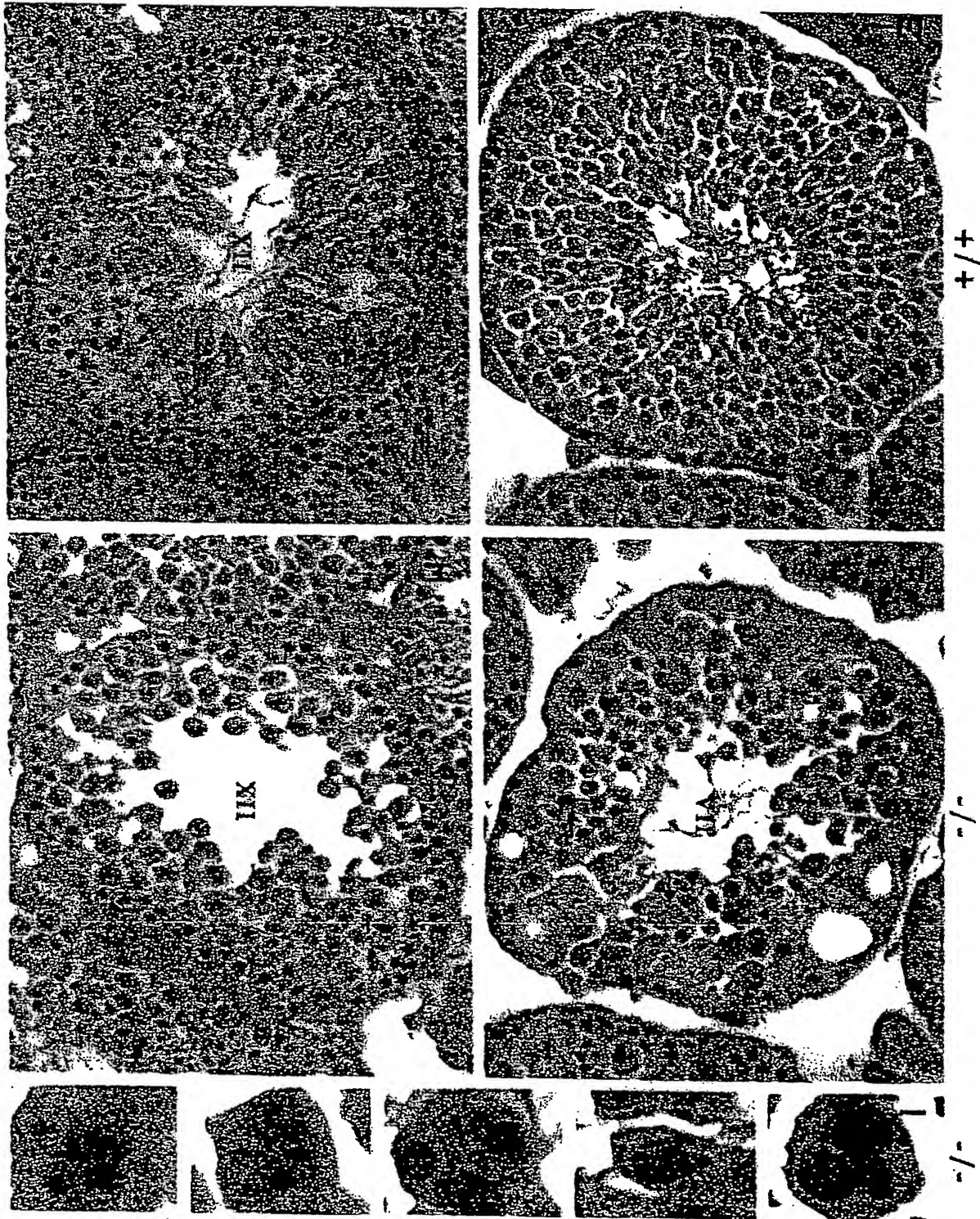
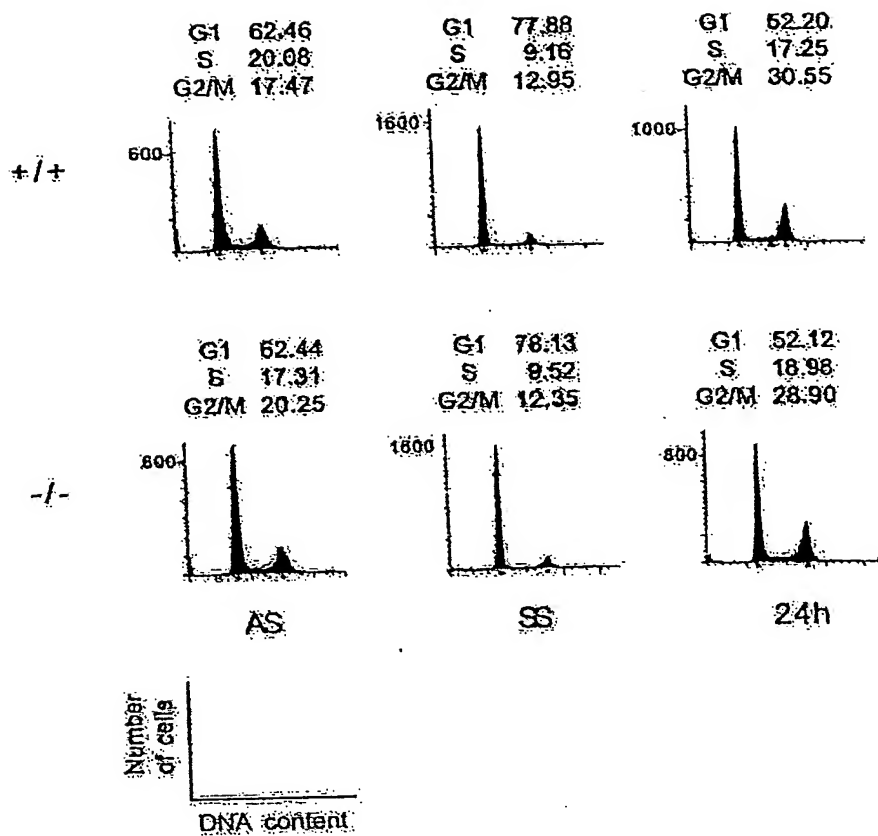
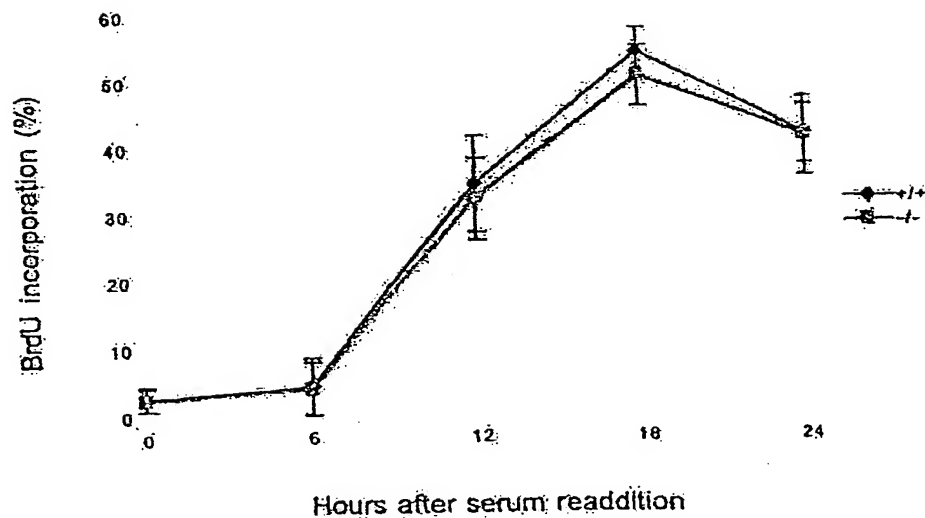
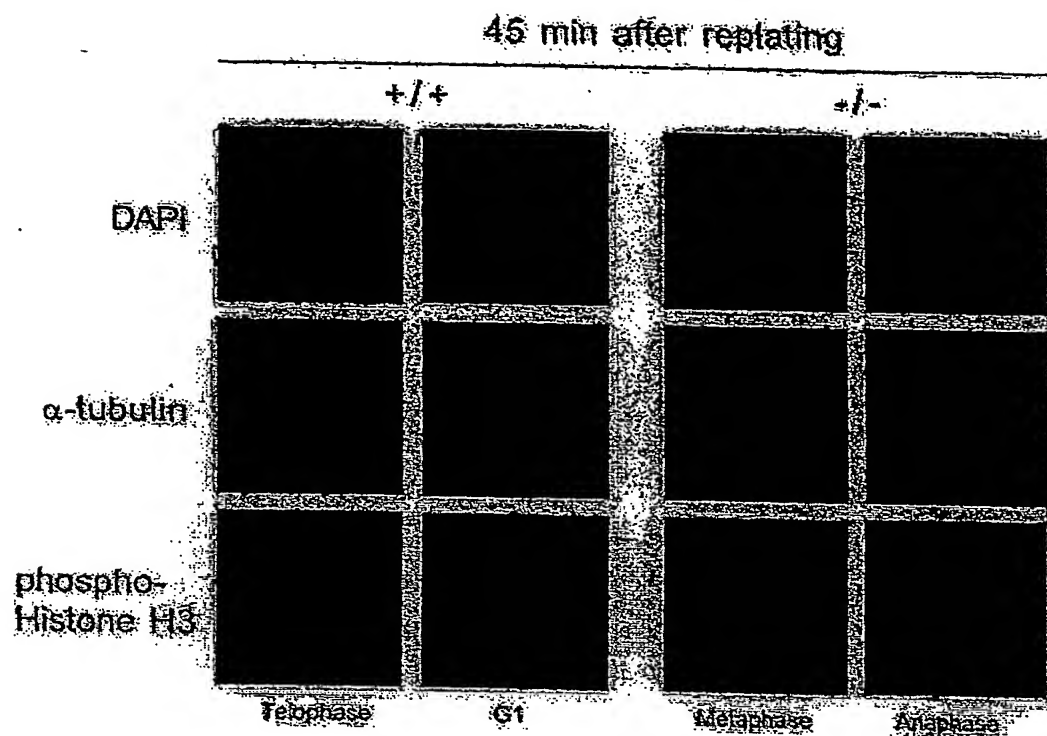


FIG. 53

A**B****FIG. 54**

C



D

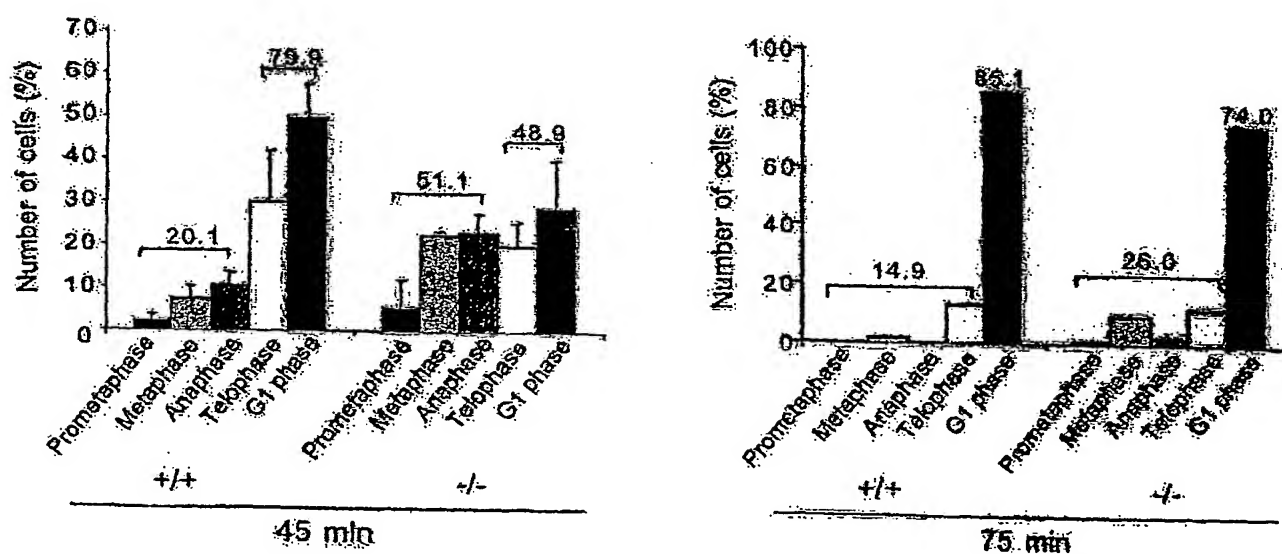


FIG. 54

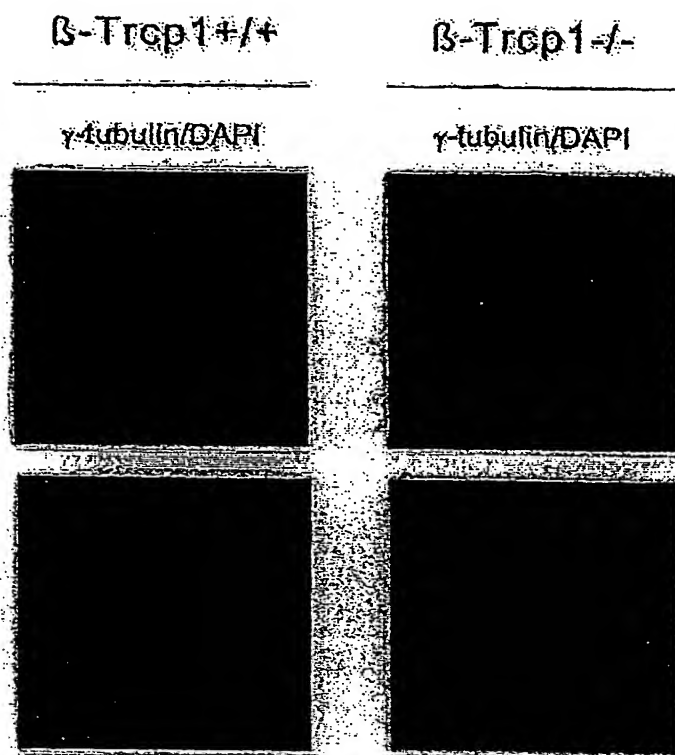
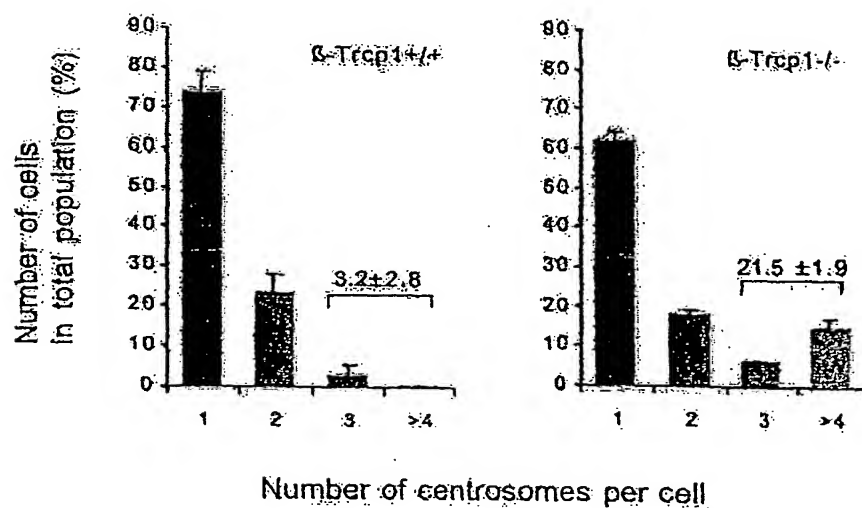
E**F**

FIG. 54

G

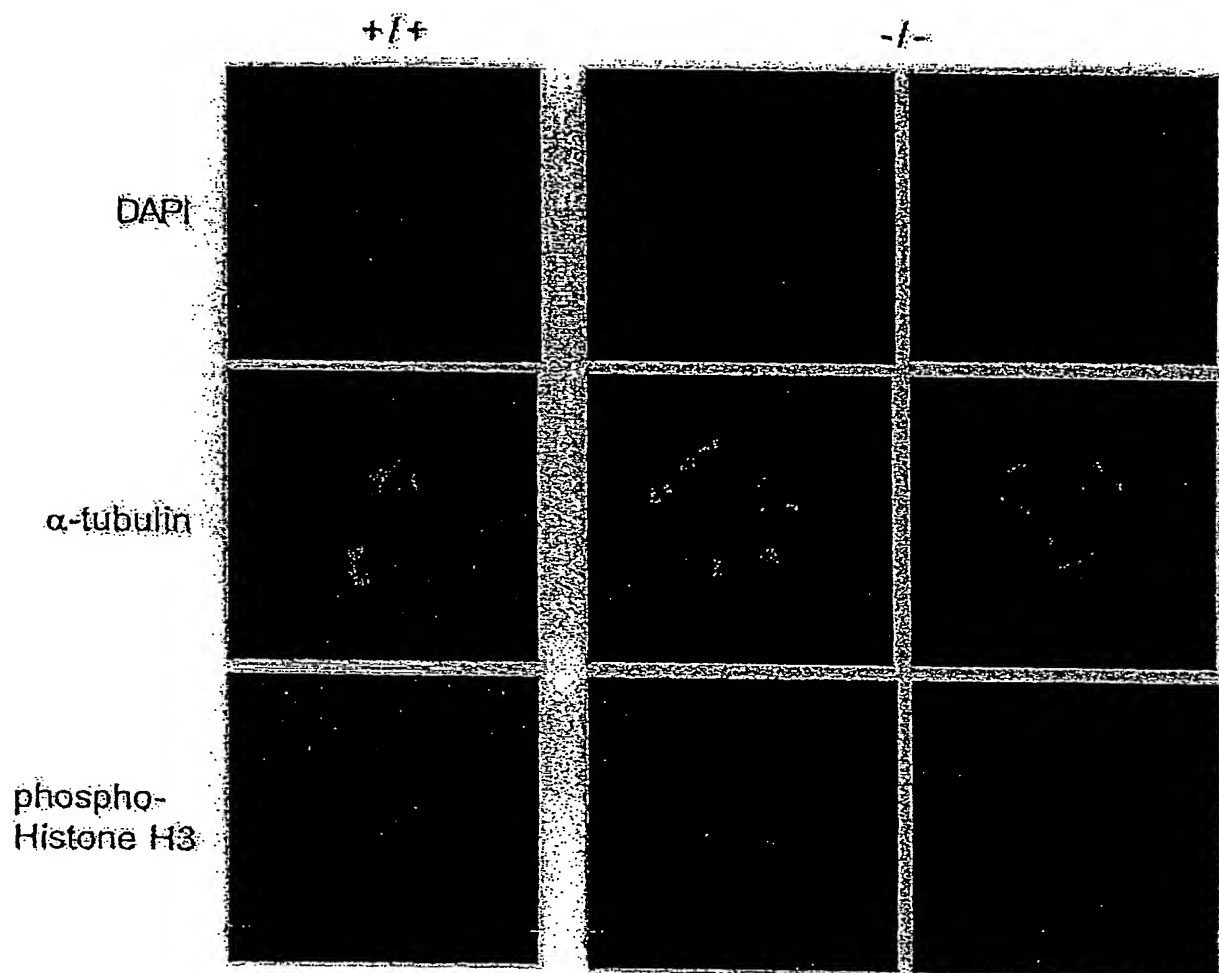


FIG. 54

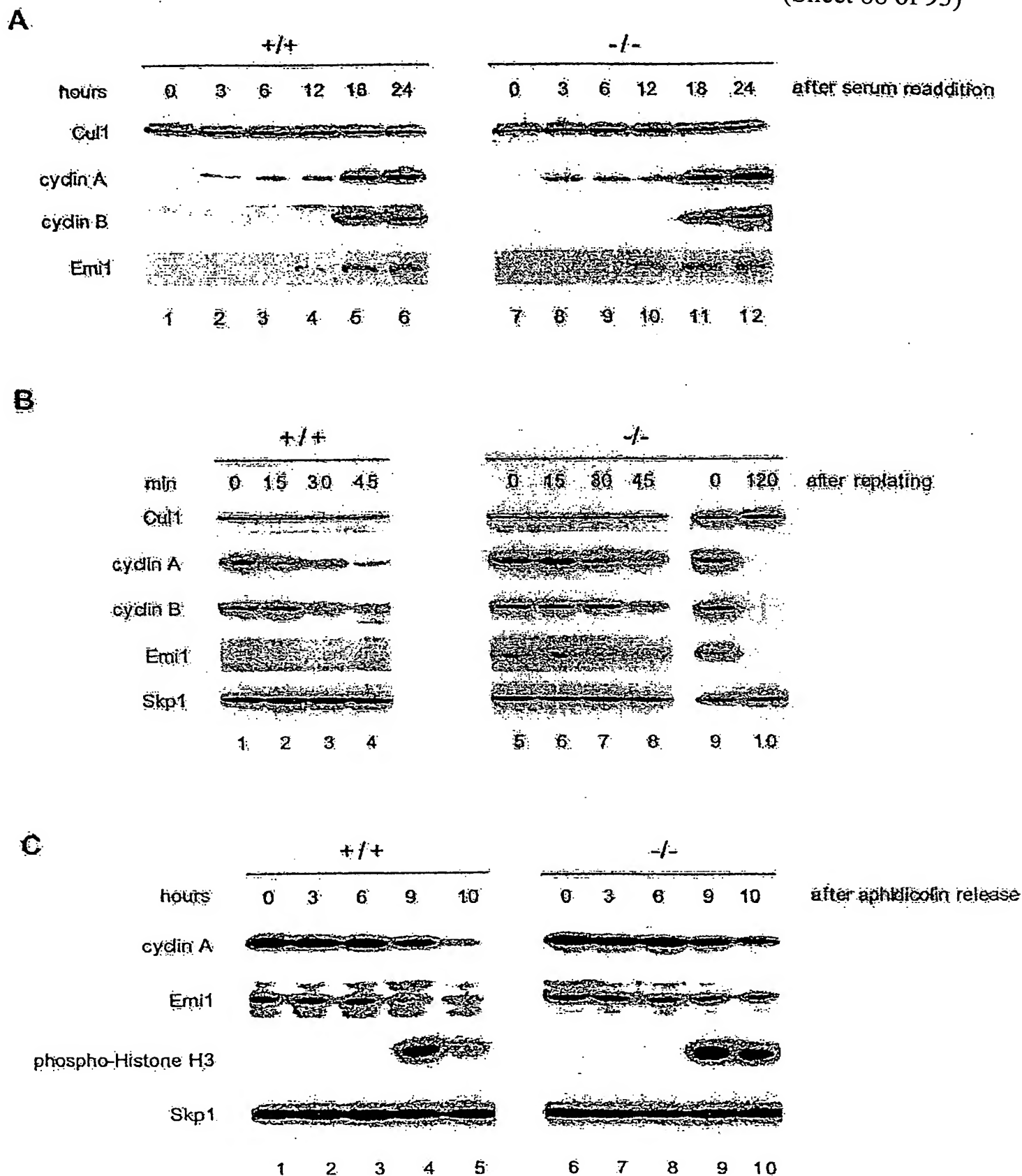
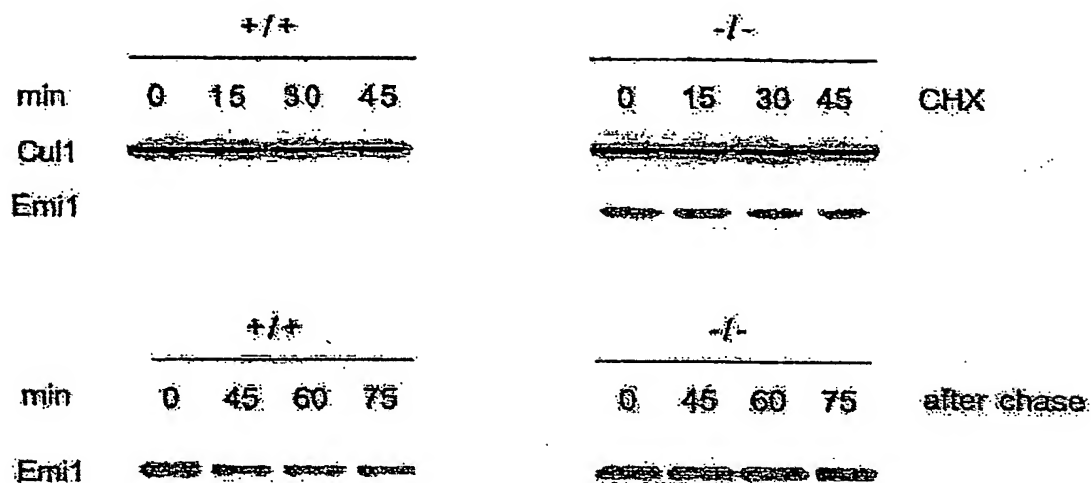
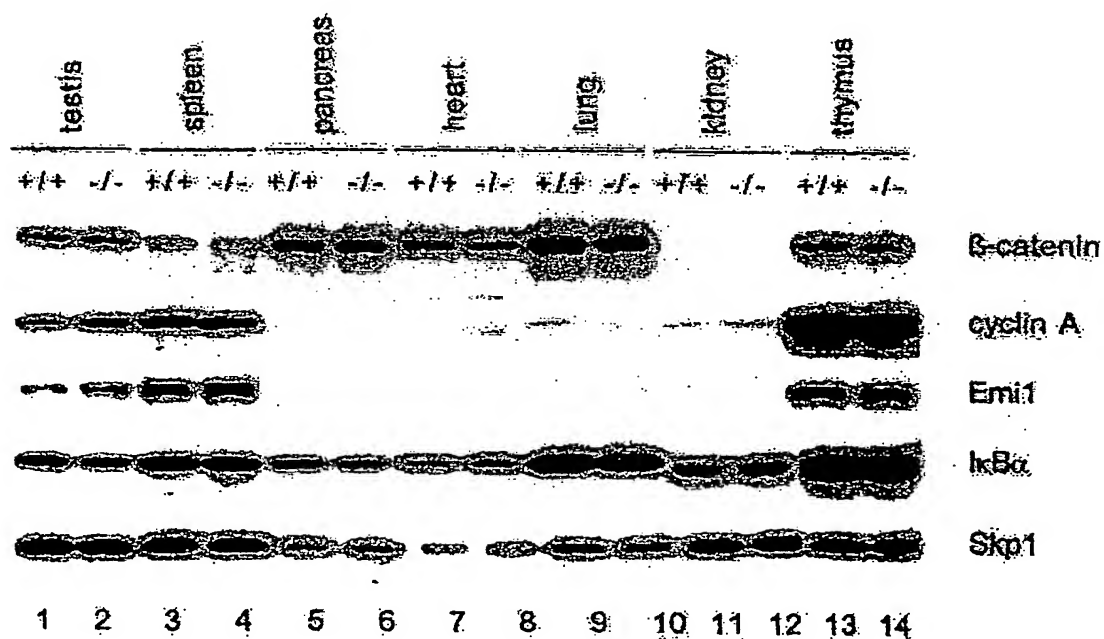


FIG. 55

D**E****FIG. 55**

A

I κ B α (Hs)	28	D	R	H	D	S	G	L	D	H	S	S	M	K	D	39
β -catenin (Hs)	29	S	Y	L	D	S	G	L	I	H	S	S	M	A	T	40
Emi1 (Hs)	141	L	Y	E	D	S	G	L	Y	S	S	S	G	S	L	152
Emi1 (Mm)	62	L	Y	E	D	S	G	L	Y	S	S	S	F	T	Q	93
Emi1 (Xl)	91	A	L	Q	D	S	G	L	Y	S	S	S	L	Q	N	102
Emi1 (Dm)	249	S	L	M	D	S	G	L	N	S	S	S	I	H	L	260

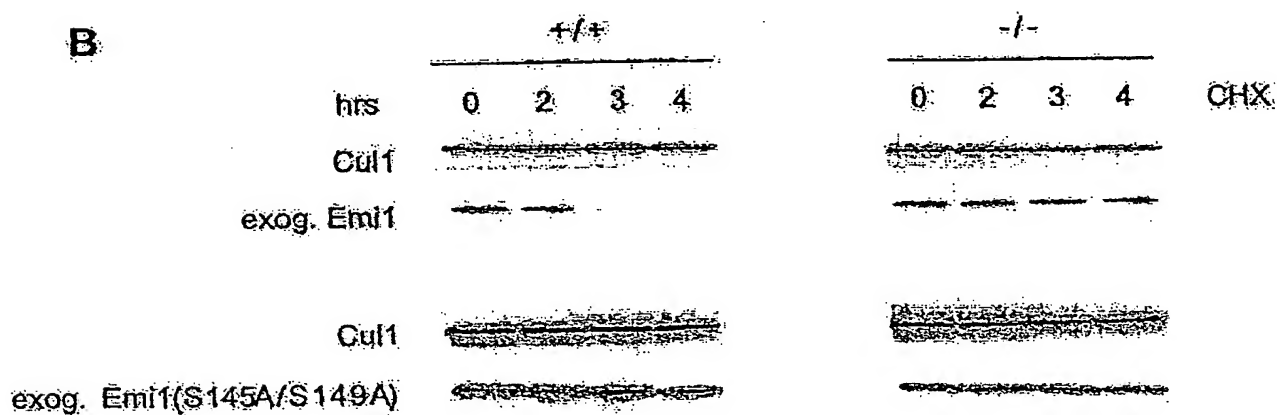
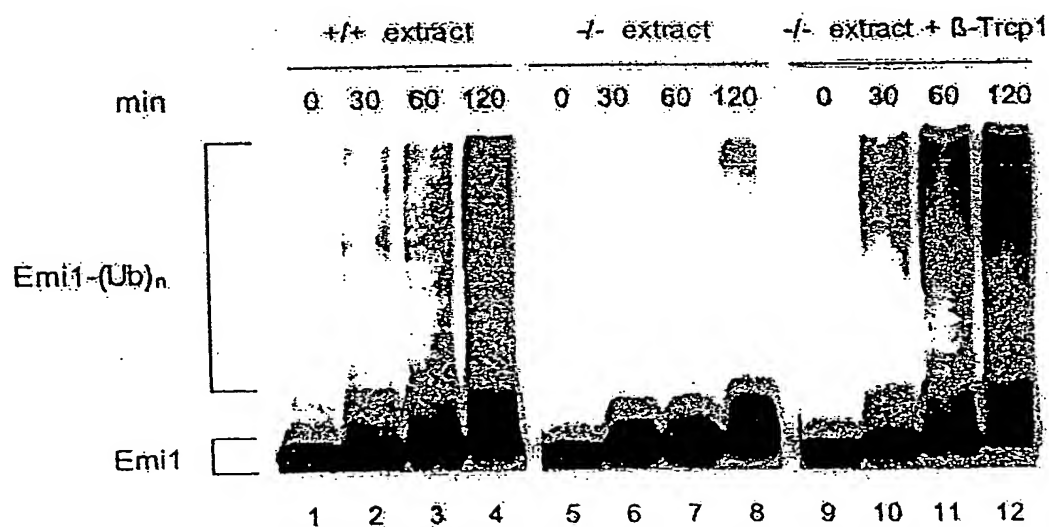
B**C**

FIG. 56

D

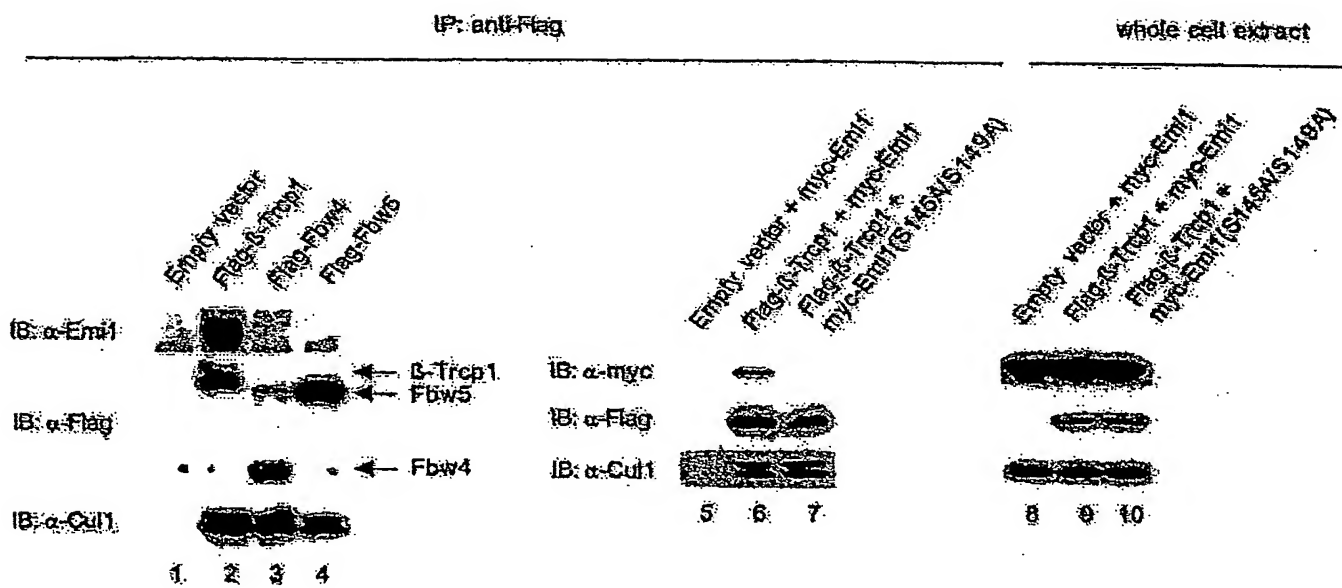


FIG. 56

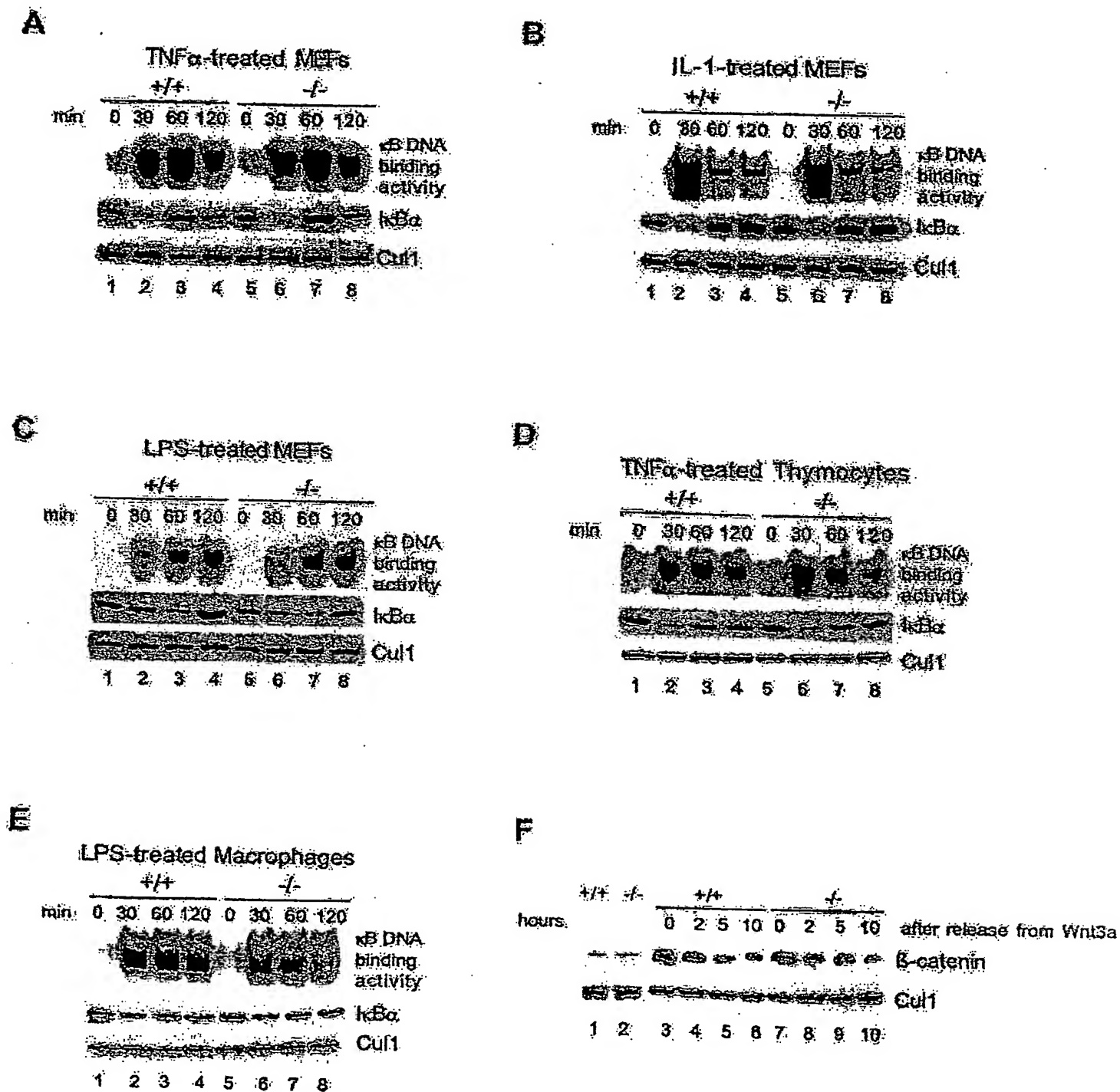


FIG. 57

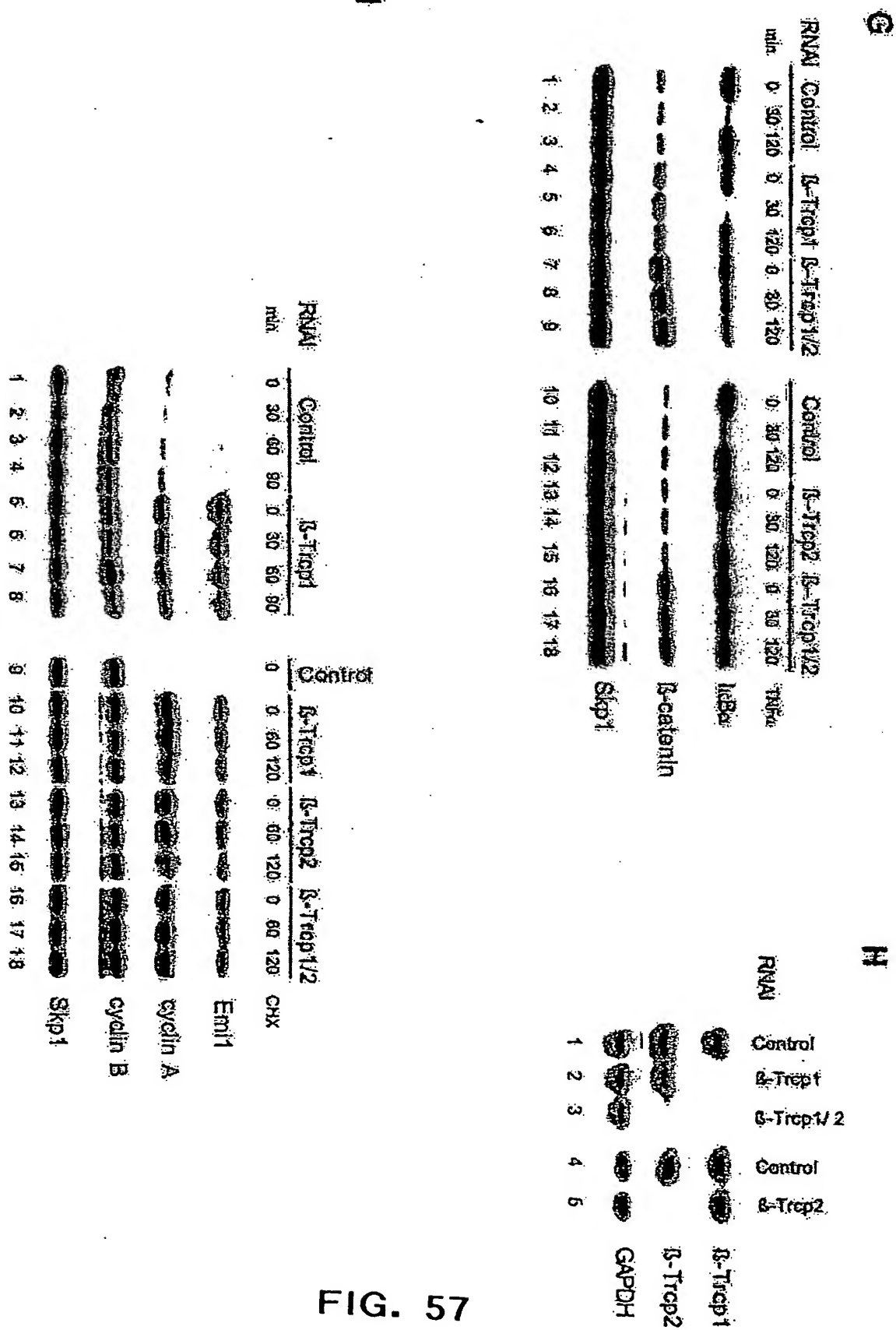


FIG. 57